

NAVAL POSTGRADUATE SCHOOL MONTEREY, CALIFORNIA



THESIS

ANALYSIS AND UTILIZATION OF FINANCIAL MANAGEMENT GRADUATES FROM THE NAVAL POSTGRADUATE SCHOOL

by

Steven H. Blaisdell

June 1996

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GRADUATES FROM THE NAVAL POSTGRADUATE SCHOOL**

by

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Lieutenant Commander, United States Navy
B.S., Auburn University, 1983

Submitted in partial fulfillment
of the requirements for the degree of

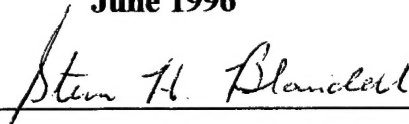
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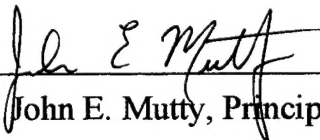
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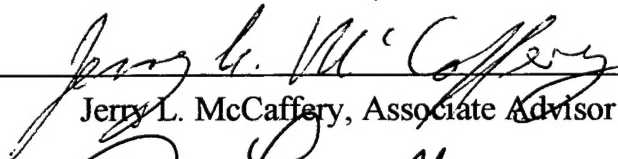


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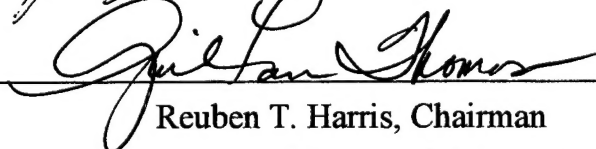
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ABSTRACT

In the present era of fiscal austerity, the need for post graduate education and the role of NPS has been closely scrutinized for their relevance to Navy and DoD objectives. The primary focus of this thesis was to determine if the Navy has been effectively utilizing NPS Financial Management graduates. A sample population of NPS Financial Management graduates, from the years 1981 to 1985, was career tracked up through 1995 for purposes of determining utilization and retention. Utilization rates, i.e., the percentage of officers that complete a payback tour, were further determined for each officer community within the population. Cohort files, built from yearly Navy Officer Master File (OMF) extracts, provided the data for this population. Analysis of the utilization and retention rates indicates that the Navy is getting a good return on its graduate education investment. Staff Corps officers achieved the highest utilization. Unrestricted Line and Restricted Line officers, while utilized at lower rates because of career considerations associated with their primary warfare specialty, nevertheless bring invaluable operational experience and perspective to critical Financial Management billets.

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I. INTRODUCTION

A. DISCUSSION

Since 1985, military spending has decreased 35% in real dollars, and the axiom "doing more with less" has never rung truer for the Navy [Ref. 1]. Political considerations such as the peace dividend and the Balanced Budget Amendment will likely continue to shrink defense budgets through the rest of this century. The post-cold war era clearly presents the Navy with major challenges, both in terms of naval strategy and in the allocation of scarce resource dollars. The Navy has responded with a bottom-up review of its roles, missions and programs. The Naval Postgraduate School (NPS) and the Navy's graduate education programs were scrutinized for their relevance to Navy and Department of Defense (DoD) objectives.

Graduate education was deemed critical to increasing the combat effectiveness of the Navy and Marine Corps. The Chief of Naval Operations (CNO) graduate education policy states:

I reaffirm the investment in graduate education of selected officers to be a strategic requirement for Navy. With today's technological, managerial, political and economic complexities, educating officers in specific subspecialties greatly increases operational readiness... Our investment in graduate education must be pursued as a priority even in the face of competing demands and declining resources.

The Naval Postgraduate School will remain Navy's primary source of fully-funded graduate education. NPS will remain committed to the development of curricula that meet the highest standards of excellence and the unique

professional needs of the Navy and the Department of Defense (DoD)...[Ref. 2].

NPS Financial Management graduates, officers who have the XX31P subspecialty code, are a unique example of the strategic requirement for graduate education.¹ The Financial Management curriculum (837), sponsored by the Director, Fiscal Management Division (N82), prepares officers for positions in budgeting, accounting, business and financial management, and internal control and auditing [Ref. 3]. In this downsizing era, the assignment of Financial Management subspecialists to validated Financial Management billets is crucial to ensuring optimal use of scarce human, physical, and financial resources.

While Financial Management subspecialists fill a myriad of billets and perform many functions, perhaps their most important contributions are in the Planning, Programming, and Budgeting System (PPBS). These Financial Management billets involve officers in the budgetary process of allocating defense resources to meet National Military Strategy objectives [Ref. 4]. Declining defense budgets combined with the implementation of a new naval strategy emphasize the need for financial management graduate education for officers assigned to these top-level decision making positions.²

¹31 is the subspecialty code field for Financial Management. The letter P designates this as a master's level of education.

² Navy White Papers "...From the Sea" and "Forward...From the Sea" currently outline the Navy's role in national defense.

This thesis will focus primarily on determination of whether the Navy is effectively utilizing their NPS Financial Management graduates. The CNO's policy refers to graduate education as an investment. Implicit to an investment is a future return or benefit associated with that investment. In the case of graduate education the return is in the form of "payback" tours where the officer fills a "payback" billet, a validated position requiring a requisite master's level of education. Utilization is tracked and measured against DoD directives for officers who have received funded graduate education. The Navy publishes a *Semi-Annual Report of Subspecialty Utilization and DoD Guideline Compliance*. This report covers a number of utilization categories and contains all officers who have received funded graduate education. This thesis will examine only those officers who have completed the Financial Management curriculum (837) at the Naval Postgraduate School.

The Naval Postgraduate School represents the Navy's primary investment in fully-funded graduate education. The purpose of this study is to assess the Navy's return on investment from NPS Financial Management graduates. More specifically, this thesis will seek to determine how consistently are graduates utilized in subspecialty billets throughout their careers. This thesis will also examine the process that determines officer assignments to the Financial Management curriculum. Recent graduating classes will be compared to the Officer Graduate Quota Plan and to the

overall inventory of P and Q coded Financial Management billets.³

B. RESEARCH QUESTIONS

The Primary research question to be addressed by this thesis is:

How effective has the Navy been in utilizing Financial Management graduates throughout their careers?

Subsidiary research questions include:

1. What percentage of NPS Financial Management graduates complete at least one tour in a Financial Management billet sometime in their career?
2. What percentage of NPS Financial Management graduates comply with DoD directives for subspecialty utilization (i.e., to fulfill a payback tour within two shore tours)?
3. How does utilization differ among officer communities (Unrestricted Line (URL), Restricted Line (RL), and staff)? By gender?
4. In recent graduating classes, is enrollment in the Financial Management curriculum proportional to the number of billets requiring a Financial Management subspecialty? Is class composition consistent and proportional among officer communities?
5. What percentage of graduates remain in the Navy until retirement eligible (minimum 20 years)?

C. SCOPE AND LIMITATIONS

The primary research objective is to determine subspecialty utilization of officers who have completed the

³Q coded billets require a proven subspecialist with a master's degree level of education.

Financial Management (837) curriculum at NPS. A sample population consisting of all NPS officers having completed or graduated from the Financial Management curriculum during the years 1981-1985, will serve as the basis for study. This historical time frame allows for a majority of the officers to be evaluated for full career utilization (minimum 20 years). All subsidiary utilization and retention questions will likewise be investigated from this population.

Data will be collected from the Registrar's records at NPS and from cohort files built using the Navy Officer Master File Extract. The purpose of a cohort file is to track members of a population from a specific point in time to measure performance by looking at attrition, retention, promotion, education and utilization.

This five-year period was selected for reasons of size and accuracy. The total number contained in the population, over 195 officers, is sufficiently large to draw valid conclusions. It is recognized that this study, because of its historical nature, may not reflect current Financial Management utilization rates. It will, however, provide a full career utilization benchmark and emphasize utilization variances between officer communities. Such information will still have relevance and insight for today's Financial Management community.

Additionally, graduating classes from the years 1994 and 1995 will be reconciled with the Officer Graduate Education Plan and the Financial Management billet inventory. This will present a recent summary of the Navy's Financial Management requirements (billet inventory), the plan to meet these

requirements and the actual results. The data will be separated by designator and community (URL, RL, and staff). This segment of the study will search for any deficiencies or inconsistencies in the process.

D. CHAPTER LAYOUT

Chapter II provides background and a literature review of Navy Financial Management education and the Officer Subspecialty System. Topics included in this review are: a brief history of Financial Management, the Educational Skill Requirements (ESR) for the Financial Management curriculum (837), the Officer Subspecialty System, the Officer Graduate Quota Plan and Human Capital Investment Theory. Chapter III describes the data and methodology employed to answer the research questions. Analysis and findings are detailed in Chapter IV. Conclusions and recommendations from this study are presented in Chapter V.

II. BACKGROUND AND LITERATURE REVIEW

A. A BRIEF HISTORY OF THE FINANCIAL MANAGEMENT PROGRAM

Lieutenant Commander Donald Hickman, in his 1972 thesis entitled "Officer Education for Navy Financial Managers," chronicled legislative actions and events that were instrumental in the Navy's development of a Financial Management Program [Ref. 5]. This brief history is constructed partly from a review of Hickman's work and partly from old NPS catalogs.

Hickman traced the roots of financial management in the Navy back to the Budget and Accounting Act of 1921. This Act created the Bureau of Budget and Comptroller General of the United States and, consequently, engendered the establishment of the Office of Budgets and Projects under the direction of the Secretary of the Navy. Accordingly, budget preparation and execution were instituted as essential functions of the Navy Department.

Increased governmental costs resulting from World War II and its aftermath greatly strained the existing federal budgeting and reporting system. In 1947, Congress addressed this issue by creating the Commission on Organization of the Executive Branch of the Government, informally referred to as the Hoover Commission. One of the Hoover Commission's findings was that financial management, or comptrollership was urgently needed in the federal government and particularly in the Department of Defense. Congress echoed this sentiment as evidenced by the following excerpt from Senate Report 841,

Financial Management in The Armed Forces, 82nd Congress 1950,
p.13:

In light of the great advances that have been made in budgetary and accounting techniques, it is appalling to examine the fiscal operation of the military establishment and find that the accounting system has been jurybuilt since the days of George Washington.

The same year the Hoover report was published, the National Security Act Amendments of 1949 were passed. Title IV of this act, Promotion of Economy and Efficiency Through Establishment of Uniform Budgetary and Fiscal Procedures and Organization, was aimed at correcting the fiscal deficiencies within DoD. Provisions in Title IV established the following:

1. A comptroller for the Office of the Secretary of Defense and a comptroller in each of the three military departments.
2. A performance type budget in DoD with segregation of operating and capital programs.
3. Uniform terminologies, classifications, reporting systems, accounting and internal audit projects and common use of disbursing facilities.
4. Working capital funds for the organization of inventories for the three departments into stock funds and for operation of industrial and commercial type activities.
5. Departmental management of funds to facilitate the carrying out of joint and special operations.
6. Reports of property and on a quantitative and monetary basis.

As per Title IV, the Office of the Navy Comptroller was established 1 June 1950. After much discussion, the Secretary

of the Navy decided that the Comptroller of the Navy would be a civilian with a military line deputy. In 1954, by means of further legislation, the Navy added the position of Assistant Secretary for Financial Management. These events fostered a greater emphasis Navywide on financial management and comptrollership.

Apparent from this evolution was the requirement for the Navy to have officer financial managers possessing a broad range of management and comptrollership skills. To prepare officers for financial management positions, the Navy established a postgraduate education program in 1952 at The George Washington University. This program, known as the Navy Graduate Comptrollership Program, marked the Navy as the first service to establish a financial management program at a public institution. The following excerpt from the 1953-54 *Naval Postgraduate School Catalog*, describes the curricula:

A 9½ months' course at George Washington University leading to a Master's degree in Business Administration. Formal academic courses are given in General Accounting, Industrial and Governmental Economics, Statistics and Reports Control, Managerial Accounting, Internal Control and Auditing, Governmental Budget Formulation and Execution, Advanced Management, Human Relations in Administration, Management Engineering and Seminar in Comptrollership. In addition, comptrollers from major industries and officers and civilians working at the department level present practical aspects of comptrollership.

The Comptrollership Curricula was placed under the cognizance of the Communications Curricular Officer at NPS [Ref. 6].

In 1962, the program was expanded to one year and the name was changed to Financial Management to reflect the broadening scope of the program. In 1966, following a contracted curriculum review by The George Washington University faculty, the Office of the Comptroller, Navy (NAVCOMPT) assumed curricular supervisory control authority and the curriculum was given the numerical designation 812 [Ref. 7].

Hickman's research entailed the development of an alumni questionnaire for the purpose of evaluating the effectiveness of the program at George Washington. The questionnaire was sent to the 105 graduates of the program from 1965, the last year the program had been analyzed, through 1971. One section of the survey asked the alumni to identify those skills which they felt were not adequately treated in the program. The skills respondents most often cited as lacking or being deficient were: Planning, Programming and Budget System, financial management techniques, governmental budgeting, auditing, and specific Navy financial management functions and procedures. The survey responses also indicated that the program had declined in its ability to prepare graduates to handle financial management positions in the Navy, as compared to the results of the 1965 study.

Coincidental to Hickman's thesis or not, the Financial Management Program was terminated at The George Washington University after the 1974 academic year. In the 1974-76 NPS catalog, Finance is only referenced parenthetically as part of the Administrative Science Curriculum, but in 1976, Financial Management (837) was implemented as a distinct curriculum at

NPS. The NPS program has since remained the Navy's primary means of educating its Financial Management subspecialists (XX31P). The program has expanded since its inception at NPS from a 12 to 18 month curriculum, depending on the academic background of the student, to its current length of a full 18 months.[Ref. 8]

B. FINANCIAL MANAGEMENT (837) EDUCATIONAL SKILL REQUIREMENTS

Hickman concluded, based on the survey results and on financial management educational programs from other services, that the George Washington program had significant shortcomings largely attributable to a lack of specific program objectives. He also pointed to the absence of a feedback mechanism in the administration of the program as a deficiency in the control process. Over time, course content and structure did not remain consistent with changing sponsor needs, therefore the program declined in its effectiveness to prepare officers for positions in financial management.

Changes initiated subsequent to the transfer of the Financial Management program to NPS have successfully addressed these issues. Specific program educational objectives have been codified into Educational Skill Requirements (ESR's). It is the responsibility of the Director, Fiscal Management Division (N82) as the program sponsor to develop, issue, and maintain the ESR's for the financial management subspecialty [Ref. 9]. ESR's define the fundamental concepts required in the curriculum and are linked to those skills essential for Financial Management subspecialists (XX31P). It is the responsibility of the financial management faculty at NPS, as the academic

coordinator, to formulate and implement a curriculum to satisfy all of the ESR's. In addition to the Financial Management subspecialty code (XX31P), successful completion of the curriculum also fulfills the requirements for a Master of Science in Management degree. Below are listed the ESR's from the Financial Management Curricular Review held 4 January 1996 [Ref. 10].

1. **Management Fundamentals.** The ability to apply basic management techniques and concepts to day-to-day military management problems and long range defense planning.
2. **Federal and Defense Budgeting.** To understand the executive and legislative roles in budgeting for national defense and the Defense and Navy budget cycles.
3. **Fund Management.** The ability to manage funds for all levels of activities in compliance with Federal and Navy regulations.
4. **Internal Control and Auditing.** To apply audit techniques that enforce sound accounting and administrative controls, safeguard assets, and review program execution.
5. **Acquisition Management.** To understand the defense systems acquisition process and the application of project management methods within this process.
6. **Economy, Efficiency and Effectiveness.** To develop skills for evaluating complex and unstructured management problems and selecting the best alternative for Navy and Defense objectives.
7. **Cost Management and Analysis.** The ability to design, implement and evaluate different costing systems for Defense and Navy activities as well as those doing business with the military.
8. **Strategic Planning and Control.** To evaluate management systems and determine appropriate policies, organizations, structures, and information systems to

ensure optimal use of available human, physical, and financial resources to satisfy the mission.

9. **Joint and Maritime Planning.** To understand origins and evolution of joint and maritime strategy, the organization of the U.S. Defense establishment, and the role of the Unified and Specified Commands in strategic planning.

10. **Innovation and Creativity.** To demonstrate individual initiative and creativity in performing independent research, including formulation and execution of a research program and presenting the results in a thesis, and as appropriate, in a command oriented briefing.

At least biennially the Superintendent of NPS, as directed by OPNAVINST 1000.16H, will conduct a curriculum review with the primary sponsor. This review is to ensure that course content and structure are matched with sponsor needs and subspecialty authorizations. Prior to the review, the primary sponsor will determine if changes in technology or operational procedures require updating an ESR. Such updates ensure criteria essential for subspecialty performance remain clearly defined. The primary sponsor may survey graduates, users of graduates, and interview experts in the subspecialty field to solicit inputs for updating ESR's. Although this formal process occurs every two years, each curriculum academic advisor (AA) maintains a continuous liaison with the primary sponsor to ensure that the ESR's and curriculum are congruent. [Ref. 11]

Lieutenant Richard Palmer, in his thesis entitled "An Analysis of the Navy's Financial Management Subspecialty Requirements" (1992), conducted research to determine if

Financial Management ESR's and the NPS Financial Management curriculum both provide adequate coverage of all the Navy's P and Q coded billets' most required financial management skills.⁴[Ref. 12]

Palmer collected and coded data from the 346 P and Q-coded Financial Management subspecialty billet requests that were submitted in FY92.⁵ He analyzed these billet requests for identifiable, specific skills. Most billet requests were quite explicit as to the specific skills required for a particular billet. Each specific skill was then slotted into one of thirteen distinct categories. He determined that these skills comprised the most important financial and non-financial skill requirements for Financial Management subspecialty billets (P and Q coded). The thirteen skills identified by Palmer are listed below (not ranked in order of importance):

1. Budget Analysis Skills
 2. Financial Policy/Advisory Skills
 3. Budget Formulation Skills
-

⁴As noted in Chapter I, a P-code denotes the requirement for a master's level of education and a Q-code is acquired upon successful completion of a P-coded billet (proven subspecialist). See Appendix A for subspecialty suffix definitions.

⁵Billet justifications are submitted by the Major Manpower Claimants as part of the biennial Subspecialty Requirements Review (SRR), per DoDINST 1322.10. This is a zero-based review and revalidation process conducted for all Navy subspecialty billets.

4. Budget Execution Skills
5. Department of the Navy (DoN) Budgetary Knowledge Skills
6. Planning Programming and Budgeting System (PPBS) Skills
7. Accounting Technical Skills
8. Communication and Liaison Skills
9. Contract Administration Skills
10. Financial Reporting Skills
11. Supervisory Skills
12. Auditing Skills
13. Weapons Systems Acquisition Skills

Palmer compared these skills against both the ESR's and the core courses of the NPS Financial Management curriculum. His methodology was to match one or more specific skills with each ESR or curriculum course based on their descriptions. A tabular summary of the ESR and curriculum analysis served as the basis for his conclusions. The most important finding for this research was that the ESR's did adequately and appropriately reflect the Financial Management billet requirements. Palmer also concluded that the Financial Management curriculum did provide adequate coverage of all the Financial Management subspecialty billet requirements as delineated by the thirteen billet skills. This thesis clearly validates ESR's as the critical bond between sponsor needs and curriculum content.

C. THE OFFICER SUBSPECIALTY SYSTEM

1. Purpose

The purpose of the Officer Subspecialty System as stated by OPNAVINST 1000.16H, "Manual of Total Force Manpower Policy and Procedures," is:

...to identify and classify requirements/authorizations for which significant experience, functional training, and advanced education are deemed necessary to meet specific operational, technical, and managerial needs.

The subspecialty system also includes the programs that provide specialized skills and knowledge required to satisfy these subspecialty needs. The subspecialty system is the Navy's primary means of determining graduate education requirements [Ref. 13]. The goal of the Officer Subspecialty System is to provide a sufficient inventory of subspecialty officers to fill current and projected subspecialty coded billets.

Navy policy dictates that subspecialty coded billets "will be validated for the minimum education level deemed essential for optimum performance." It is not considered practical or desirable to satisfy all subspecialty skill requirements through degree level programs. The term "level" does not suggest a requirement for a degree, but rather the requirement for a commensurate education at the minimum level essential for optimum performance. Officers may receive a subspecialty code via graduate education provided through NPS, various Scholarship Programs, or off-duty postgraduate programs. Subspecialty codes may also be gained through

experience in a subspecialty coded billet or, if uncoded, in a billet that meets established skill requirements and tour lengths. [Ref. 14/15]

2. Subspecialty Codes

An officer's primary specialty is identified by a designator code. Billets that require additional education or training beyond the designator code are identified by subspecialty codes. These codes contain five characters consisting of four numerals and one letter. As referenced from the *Officer Subspecialty System Handbook*, these codes are divided into three sections: the 1st and 2nd numbers define the functional field, the 3rd and 4th numbers define the education/training/experience field, and the 5th alphabetic character defines the level of experience, education and training. Figure 1 displays a subspecialty code example and APPENDIX A contains the complete inventory of subspecialty code identifiers. URL, RL and Staff Corps are eligible for subspecialties regardless of designator. This is, however, considered a secondary professional development to their primary specialties [Ref. 16]. There are approximately 50 unrestricted line, 180 medical, and 30 staff corps officer subspecialty codes [Ref. 17].

3. Subspecialty Requirements Requests/Review

The process of determining subspecialty needs begins at the Command and Sub Activity level. This process, as described by the *Officer Subspecialty System Handbook*, is initiated with the submission of Officer Subspecialty Requirements Requests (SRR) to the Major Manpower Claimant (MMC). The SRR outlines the minimum requirements necessary to

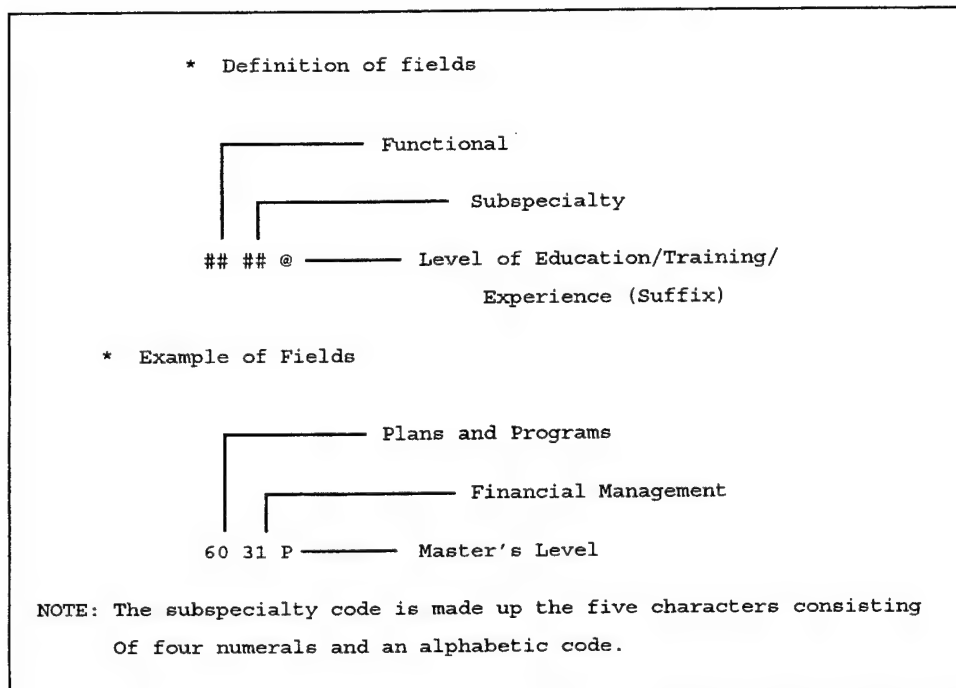


Figure 1. Subspecialty Code Fields. From Ref.[13:p. 19].

sustain the mission, functions and tasks of the command. Among the responsibilities of the MMC are to ensure the SRR fulfills the requirements specified in the subspecialty billet criteria statements. The MMC also considers the SRR's impact on activity Manpower Authorizations.

If the MMC determines that the SRR is valid, it is forwarded to the Officer Subspecialty Management and Graduate Education Section (PERS-213D) within the Bureau of Naval Personnel. PERS-213D acts as the Subspecialty Requirements Coordinator (SRC). The SRC coordinates subspecialty management functions with the Primary Consultants (PC) and Designator Advisors (DA) and also develops policy for officer subspecialty management. When the SRC receives a SRR it is then routed to the PC and DA for review.

The DA's are the subspecialty experts who primarily ensure that subspecialty codes and designators are compatible. DA's advise subspecialty PC's on career paths, officer inventories and other aspects of their respective designators. The DA's then recommend approval or disapproval of the requirement back to the SRC.

The PC serves as the main point of contact for a specific subspecialty field. PC's determine if SRR's are a valid utilization of the subspecialty and ensure that the request matches the requirements specified in the subspecialty billet criteria statements. They also provide the SRC with an approval or disapproval recommendation of the SRR. The SRC, based on the recommendations of the PC and DA, makes a final approval or disapproval of the request; approved requests establish the billet as a subspecialty requirement.

In addition to this process which can happen at any time, every two years a Subspecialty Requirements Review is conducted per OPNAVINST 1000.16H. This is a zero-based review and revalidation of all Navy subspecialty requirements. As a result, the number of P and Q-Coded Financial Management billets has fluctuated from review to review, as shown in Figure 2. These numbers generally correspond to the Navy build up and draw down cycle that began in the early 1980's.

4. Utilization

Utilization, as defined by DoD, is the assignment of officers who have received fully or partially funded graduate education to validated positions that require that education. By Navy guidelines any officer who attends graduate school full time for a period of 26 weeks or more under any partially

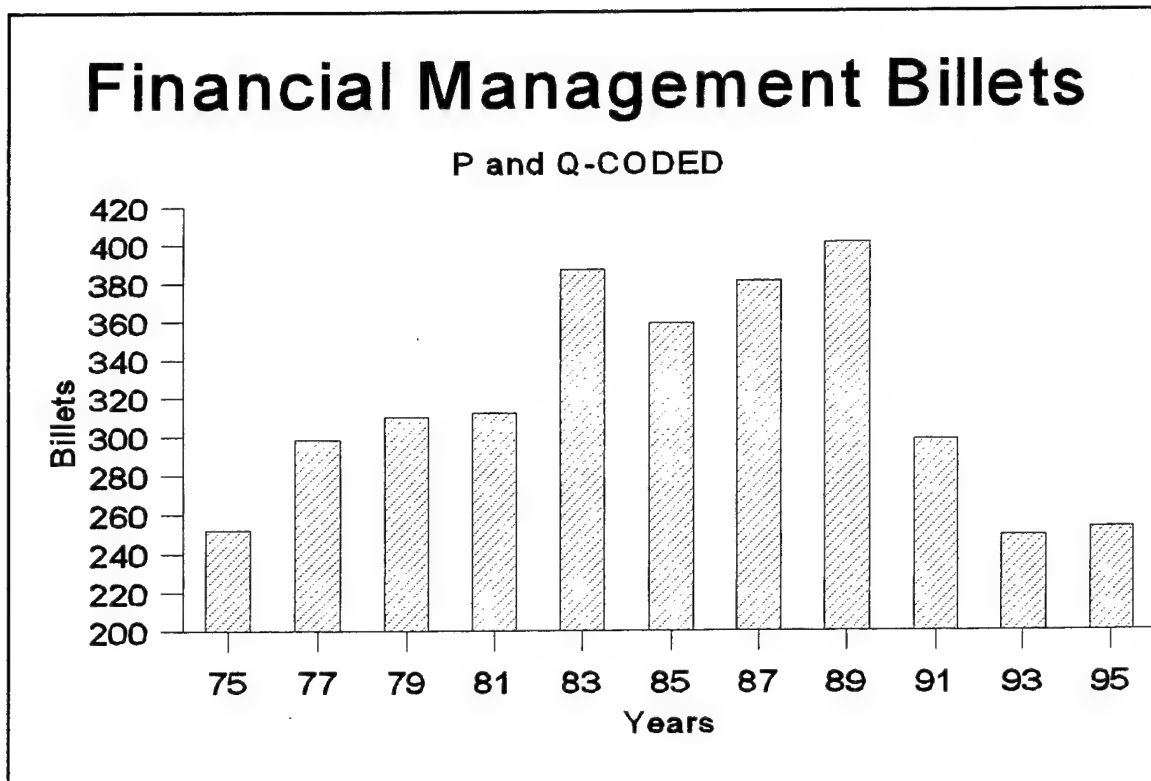


Figure 2. P and Q-Coded Billets. From Ref. [18]

or fully funded program is considered funded. Funded graduate education thus represents the Navy's investment and utilization is the measure of return. The CNO's Graduate Education Policy states the following regarding utilization:

The goal for utilizing subspecialists is 100 percent. ... Multiple tours in a subspecialty are desirable. Successful completion of a subspecialty tour will be viewed as an important indicator of potential for higher rank. [Ref. 19]

DoD Directive 1322.10, "Policy on Graduate Education for Military Officers," requires that officers who receive funded graduate education serve in a validated position (requiring that education) not later than the second assignment following completion of that education. The Navy interprets the DoD

window of compliance to be assignment to an appropriately coded subspecialty billet within two *shore* tours following graduation. This provides flexibility for the Navy officer sea/shore rotation.[Ref. 20]

One tool the Navy employs to manage subspecialty utilization is the *Semi-Annual Report of Subspecialty Utilization and DoD Guideline Compliance*, distributed by PERS-213D. This report primarily focuses on DoD compliance and overall utilization for each subspecialty. The data presented is a "snapshot in time," and provides an indication of the general health of each subspecialty. It is noted, however, that utilization is computed based solely on those officers who are on active duty during the report period. Officers who do not complete a payback tour and leave active duty prior to the two shore tour compliance window are not ever reflected against utilization, as well as those who did complete a tour and left active duty. While the semi-annual report tracks utilization of officers from any funded education program, this thesis will only examine utilization among graduates of the NPS Financial Management program.

Appendix B is the 13 October 1995 semi-annual report. The last three columns of this report are of primary significance: OVERALL TOTAL (number of officers that have received funded graduate education), DoD COMPLY (percentage of officers that have completed a payback tour within two shore tours), and OVERALL UTIL (percentage officers that have completed a payback tour sometime during their career). It can be seen that utilization among the different subspecialties ranges from 0 to 100 percent in both the DoD

COMPLY and OVERALL UTIL categories. Financial Management achieved 78 percent DoD compliance and 87.7 percent overall utilization. Also note that Financial Management subspecialist have the largest inventory of officers at 498.

Subspecialty fields that are closely related may permit cross utilization among their subspecialty officers. This allows detailers to fill subspecialty billets with officers of compatible subspecialties and score this as a utilization tour for that officer. Compatibility must be agreed to by the Primary Consultants of all the subspecialties involved. Changes to the subspecialty matrix are usually accomplished via the SRR process.

The current matrix is shown in Appendix C. To determine compatibility using this matrix, locate "31" (Financial Management) across the top row and read down this column. For every "X" in this column, read across horizontally to the left hand margin to locate the compatible subspecialty billet. When an officer is detailed to a billet that is an exact match (e.g. XX31P subspecialist to an XX31P billet), it is considered to be a direct fill. When an officer is detailed to a compatible billet (e.g., XX31P subspecialist to an XX30 billet), it is considered to be as an indirect fill. Utilization is achieved in either case. This matrix allows no other subspecialty officer to fill a Financial Management billet and achieve utilization credit, and Financial Management subspecialists can only achieve out-of-subspecialty utilization in a general management coded billet. In previous years the Financial Management subspecialty did have compatibility with other subspecialties. This change,

perhaps, can be attributed to the greater specialization that has developed within the Financial Management subspecialty. [Ref. 21]

D. OFFICER GRADUATE EDUCATION QUOTA PLAN

Navy personnel planners (PERS-213D) distribute an Officer Graduate Education Quota Plan on a yearly basis to facilitate management of the subspecialty system. The yearly quota plan publishes quotas by curricula and designator and also details the quarterly student loading for the year. This plan is the end result of the Quota Planning Conference where a requirements based plan is balanced against any supportability issues with both Officer Placement (PERS-440), and NPS [Ref. 22].

The primary tool used by the planners is the Postgraduate Education Quota Model. This model was developed to project short and long range graduate education requirements based on validated subspecialty billets requiring graduate level skills. Quotas from this model are grouped by subspecialty, officer community (URL, RL, Staff Corps) and officer grade. The Postgraduate Quota Model incorporates a spreadsheet layout and is divided into two separate models: the Steady-State model and the Quota Planning Model. [Ref. 23]

The Steady-State Model generates estimates of the constant annual student quotas required to fill current P and Q-coded billets. This model makes assumptions regarding utilization rates, tour lengths and officer availability. It does not, however, consider the current inventory of subspecialists in the estimates and holds the number of billets in a given subspecialty to be constant over time. The

predictions give the constant number of officers to be educated each year for a given subspecialty to meet all the validated billets.[Ref. 24]

The Quota Planning Model computes annual quotas over a five year projection period. This model compares billet requirements with the inventory of subspecialists, including those currently in a graduate program, to generate quotas. An aging factor is applied to the inventory that predicts how many officers will be in the system in each of the planning years. User defined variables included in this model are tour lengths, promotion and attrition rates.[Ref. 25]

The goal of the Postgraduate Quota Model is to achieve a constant rate of input for each curricula, thus smoothing out fluctuations and sustaining the subspecialty system at optimal efficiency. PERS-213D adjusts the steady-state quotas after comparing key ratios from the Planning Model and produces the requirements based plan.[Ref. 26]

The Quota Planning Conference is then convened to draft the final plan. The following are the primary participants at this conference: PERS-213D-who presents the plan; PERS-440 Graduate Education Placement Officer-who represents the officer detailers; and Naval Postgraduate School Assistant Director of Programs-who represents NPS. Other commands represented include: Director of Naval Training (N7); Assistant Vice-Chief of Naval Operations (N09B)-the resource sponsor for NPS; and Single Manpower Resource Sponsor (N122)-the billet sponsor. The quotas for each subspecialty and designator are reviewed. Some quotas may be modified to meet a parameter or limitation of a participant. The Deputy Chief

of Naval Operations (Manpower and Personnel) promulgates the final plan and officer graduate education detailers are responsible for its execution.[Ref. 27]

E. HUMAN CAPITAL INVESTMENT THEORY

Human capital investment is the notion, first espoused by labor economists, that useful skills and knowledge are a form of capital and that human capital is inextricably linked to an organization's productivity and effectiveness. This theory views people as the most important asset in an organization and that investment in human capital will yield returns over a long period. It considers the "economic" costs of human capital investment to an organization; the cost of the education or training itself, the salary and lost productivity of the person during their training.⁶ This is weighed against the long term benefits to be gained by having a better trained or educated person in the organization. Economist Theodore Schultz credits human capital investment, more than any other form of capital, as the major explanation of long term increases in the national output.[Ref. 28]

The belief that the return on human investment will exceed all economic costs is a foundation for the Navy's funded graduate education programs. The Officer Subspecialty System is designed to ensure the investment in human capital is effectively utilized. Basic to the achievement of this goal is the retention of those subspecialty officers for a period of time sufficient for the Navy to recoup its

⁶Economic costs include opportunity costs in measuring total expenditures.

investment. Per OPNAVINST 1520.23B, "Graduate Education," an officer attending a graduate education program incurs an active duty obligation equal to three times the length of education through the first year plus one month obligation for each month of education thereafter. This affords the Navy some degree of protection against officers voluntarily leaving active duty shortly after graduation and prior to their utilization. As the Navy prepares for the challenges of the next century it is imperative that the Navy maintains its commitment to funded graduate education.

This chapter has chronicled the genesis of the Financial Management program up to its present state, including background on the Officer Subspecialty System. Also discussed in this chapter was Human Capital Investment Theory, a theoretical justification for funded graduate education programs. Chapter III will describe the data used to determine utilization and retention and will also detail the methodologies employed in this study.

III. DATA DESCRIPTION AND METHODOLOGY

This chapter describes the sample population of NPS Financial Management graduates (1981 to 1985) that is serving as the basis for this study on utilization and retention. The methodology employed to track and determine utilization and retention of this population is also explained. Finally, discussion is provided on the methodology used to analyze the process that determines enrollment in the Financial Management program, as well as the actual execution of the enrollment plan.

A. NPS SAMPLE POPULATION 1981 TO 1985

The initial data on this population was gathered from hard copy archival records in the Registrar's office at NPS. The "Graduation Report-U.S. Navy Officers" (NAVPERS 1520/1), provided profile information on the officers from each quarter's graduating class. Yearly class profiles of Financial Management graduates were constructed and segregated by designator, officer community, and gender. Gender was not specifically listed in the graduation report, but a determination was made based on the name. During this period (1981 to 1985) most women were either designated 110X (General Unrestricted Line) or 310X (Supply Corps), which reduced ambiguity associated with unisex names and other designators. The actual number of officers in question is immaterial to the scope of this study.

The compilation of this data does not directly address the utilization research questions, it does however, serve as a means to validate the cohort files extracted from the Navy Officer Master File (OMF). The cohort files are the basis for measuring utilization in this population of subspecialty officers. Therefore, the Registrar's records are a definitive source to compare against cohort data for accuracy and completeness. The profiles will also display any obvious trend or single year anomaly in the officer population that may warrant further investigation.

1. Financial Management Subspecialty Codes

The graduation report is forwarded to the Chief of Naval Personnel (PERS-440), where it is used to assign subspecialty codes to officers according to their respective curriculum. Officers in the Financial Management curriculum are assigned either subspecialty code XX31P or XX31G. Those officers that are awarded a Master's of Science in Management degree receive a XX31P subspecialty code, and those officers that fail to satisfactorily complete the full prescribed curriculum with their graduating class are assigned a XX31G subspecialty code. A subspecialty code suffix of G denotes a master's degree not fully meeting Navy criteria or graduate education at less than a master's level (Appendix A). During the period 1981 to 1985, an XX31G code was usually the result of an officer not completing his thesis prior to graduation. If the officer subsequently finished his thesis a XX31P subspecialty code was reflected in the next graduation report. Other reasons for a XX31G code included a low aggregate grade point average, less than 3.00 on a 4.00 scale in graduate courses, and failure to

complete an essential course. There were 182 officers listed on the graduation reports under Financial Management (837) during this period, 27 of those officers detached from NPS with a XX31G code. For purposes of this study, any officer that attended NPS and was listed on a graduation report for a subspecialty code of XX31P or XX31G will be referred to as a graduate.

It was noted that a number of officers in the other management curriculums earned XX31P as a secondary subspecialty code. These officers were able to satisfy all requirements for the Financial Management curriculum as well as those of their primary subspecialty. Since the management curriculums all used a common matrix for their core courses, officers could attain Financial Management as a secondary subspecialty by taking requisite Financial Management courses as electives and by validating courses related to undergraduate work. Officers in the following curriculums received dual subspecialty codes during this period: Transportation Management (814); Acquisitions and Contract Management (815); Material Logistics Support Management (827); and Manpower, Personnel and Training Analysis (847).

2. Officer Communities

Officer assignment to the Financial Management curriculum at NPS is subject to academic prerequisites and guidelines as set forth in OPNAVNOTE 1520, "Fully Funded Graduate Education Programs." General eligibility for input is defined by designator and grade as determined from existing P-coded requirements. Enrollment is open to officers in ranks from Lieutenant junior grade through Lieutenant Commander.

Financial Management eligible designators, for purposes of this utilization study, are grouped by officer community: Unrestricted Line (URL), Restricted Line (RL), and Staff Corps. OPNAVINST 1000.16H, Appendix R, provides the following definitions for each of these officer communities:

Unrestricted Line (URL): An officer of the line, Regular Navy or Naval Reserve, eligible to command at sea.

Restricted Line (RL): An officer of the line, Regular Navy or Naval Reserve, who is not eligible to command at sea and who is designated for engineering duty (EOD), aeronautical engineering duty (AEDO), aviation duty (ADO), special duty or limited duty.

Staff Corps: Of the two major naval officer categories (line and staff) an officer of the staff corps, Regular Navy or Naval Reserve, performing duty in one of the following eight staff corps: Medical Corps, Dental Corps, Medical Service Corps, Nurse Corps, Judge Advocate General Corps, Supply Corps, Chaplain Corps, and Civil Engineering Corps.

Officer designators contain four numbers, the first three identify the community in which the officer is appointed and/or designated. The fourth position number defines the status of the officer. The designator 1310, for example, is an Aviation designator interpreted as follows:

131X	An Unrestricted Line Officer who is qualified for duty involving flying heavier-than-air, or heavier and lighter-than-air type aircraft as a pilot.
XXX0	An officer of the Regular Navy whose permanent grade is Ensign or above.

Table 1 displays the complete list of designator codes and definitions that are eligible for input into the Financial Management curriculum, categorized by community, and the definitions of fourth position numerals.

Table 1. Financial Management Eligible Designators
From Ref. [29]

DESIGNATOR CODE	UNRESTRICTED LINE (URL)
110X	General Unrestricted Line Officer (Reclassified 170X (RL) in 1994)
111X	Surface Warfare Officer
112X	Submarine Officer
113X	Special Warfare (UDT/SEAL) Officer
114X	Special Operations Officer
130X	A member of the aeronautical organization who is not a pilot or a flight officer
131X	Naval Aviator
132X	Naval Flight Officer
	RESTRICTED LINE (RL)
161X	Special Duty Officer (Cryptology)
163X	Special Duty Officer (Naval Intelligence)
170X	Fleet Support Officer (110X General (URL) prior to 1994)
	STAFF CORPS
230X	Medical Service Corps Officer
310X	Supply Corps Officer
510X	Civil Engineer Corps Officer

	FOURTH POSITION DEFINITION
XXX0	An officer of the Regular Navy
XXX5	An officer of the Naval Reserve
XXX7	An officer of the Naval Reserve on active duty in the TAR program (Training and Administration of Reserves)

Table 1 continued

3. Data

The data, presented in Table 2, shows yearly totals of NPS Financial Management graduates and the designator composition of the graduates. Officers were grouped by year according to their completion date. For example, an officer who had a completion date of June 1981, but did not earn a degree (assigned a XX31G code) and detached from NPS with a thesis extension, and subsequently completed the thesis in 1983 and earned a degree (XX31P code), is listed with the 1981 graduates. This method of classification is uniform with the Navy Officer Master File (OMF). The total population for this five year period is 197 officers. The number of graduates increased every year from 1981 to 1984 and remained relatively unchanged from 1984 to 1985. This trend is consistent with the overall personnel build up that occurred in the Navy during that period.

This table highlights two major points. First, not all eligible designators are represented in this population. Eligible designators with small officer populations such as 113X (Special Warfare (UDT/SEAL) Officer), 114X (Special Operations Officer), and 161X (Special Duty Officer

Table 2. NPS Financial Management Graduates
(By Designator)

DESIG.	1981	1982	1983	1984	1985	DESIGNATOR TOTALS
110X	2	0	4	4	3	13
111X	5	5	7	7	11	35
112X	1	1	0	0	1	3
113X	0	0	0	0	0	0
114X	0	0	0	0	0	0
130X	0	0	0	1	0	1
131X	1	3	3	8	9	24
132X	2	2	4	5	6	19
*151X	1	0	0	2	0	3
161X	1	1	1	0	0	3
163X	0	0	0	0	0	0
230X	2	4	1	3	2	12
310X	9	10	13	14	12	58
*410X	0	0	1	0	0	1
510X	4	7	3	6	5	25
YEARLY GRAD. TOTALS	28	33	37	50	49	197

* Per OPNAVNOTE 1520, 10 April 1995, these designators have no Financial Management P-coded billet requirements.

151X Aerospace Engineering Duty (AEDO) Officer (RL)

410X Chaplain Corps Officer (Staff)

(Cryptology)) had no officers graduate from the NPS Financial Management program during this five year period. It would require a study of the billet inventory from this period to make a definitive statement regarding the significance of this pattern. However, just based on relative numbers among the designators, it is not a material issue for the respective officer communities (URL and RL).

The second highlight is the two ineligible designators, per the current OPNAVNOTE 1520, that are present in the population. The applicable Navy instruction for confirmation of eligibility during the period 1981 to 1985, is not available. Designator 151X, Aerospace Engineering Duty Officer (AEDO), shows up in the years 1981 and 1983 suggesting that it may have been a valid designator at that time. This was probably not the case with the one Chaplain Corps Officer (410X) from 1983. The number of AEDO's is in this population is material to the total number of RL officers, from a total of six RL officers, three are AEDO's. The chaplain, on the other hand, is a statistical anomaly in the population of Staff corps officers.

When the graduates are grouped by officer community a disparity of distribution among the communities is evident. Figure 3 graphically displays the proportional number of graduates in each community by year. The RL community is minimally represented, not at all in 1985, while the yearly percentages of URL and Staff Corps officers changes during the period. In 1981, URL officers make up 39 percent of the graduates for that year and in 1985, they are 61 percent of the total. Conversely, Staff Corps officer percentages had

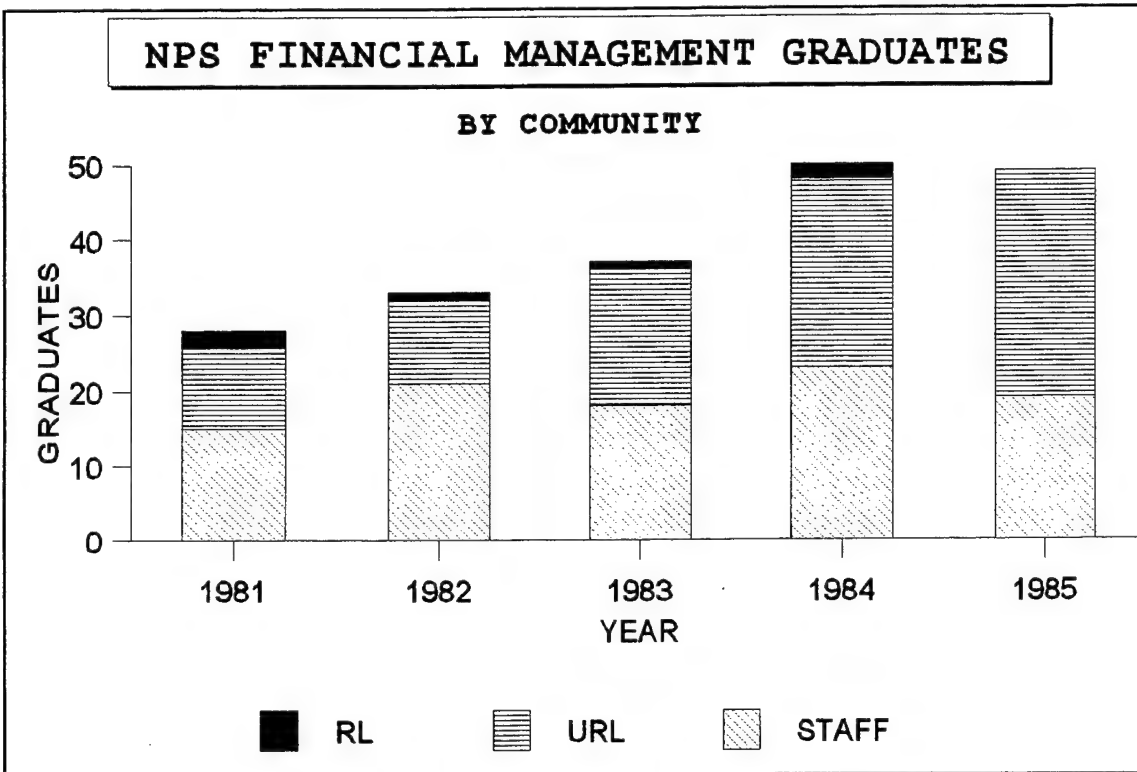


Figure 3. NPS Financial Management Graduates by Community.

the opposite trend. It is not within the scope of this thesis to study the officer distribution of this population, but this issue is one that could be developed for further research. Figure 4 provides the five year aggregate percentages for the

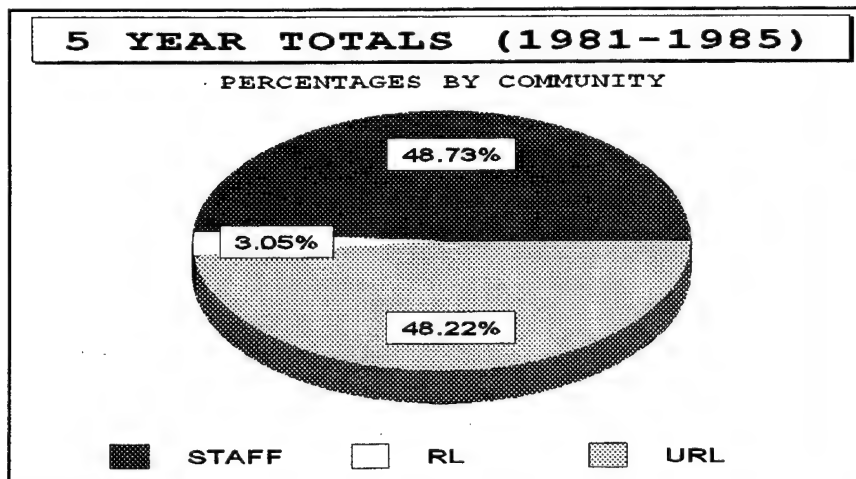


Figure 4. Totals by Community.

population. This graphic shows URL and Staff Corps officers almost evenly split as a percentage of the overall total, 48.22 to 48.73 percent respectively, with the RL community negligibly represented at 3.05 percent of the total.

The population was separated by gender as shown in Figure 5. There were 14 females in the total population of 197 officers, for a percentage of 7.1 percent. This small percentage is interesting when compared with another NPS utilization thesis. David Simboli, in his 1993 thesis

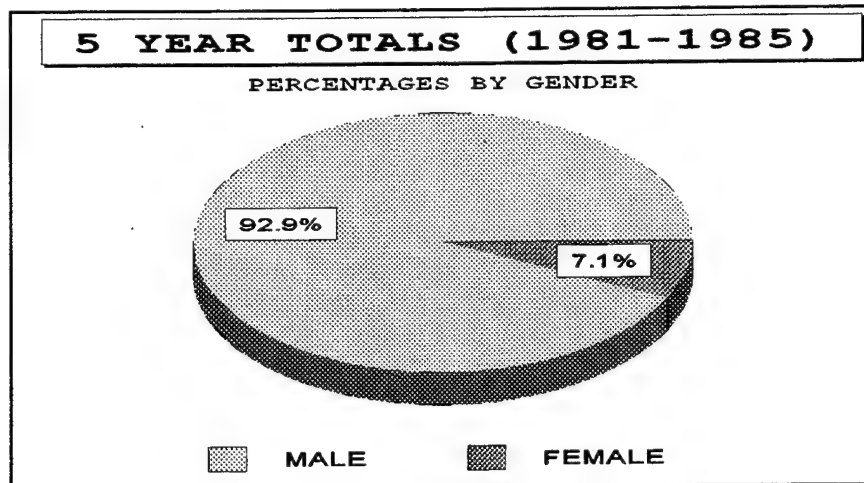


Figure 5. Totals by Gender.

entitled "Subspecialty Utilization in the Navy: A Longitudinal Analysis of Unrestricted Line Officers who graduated from the Naval Postgraduate School," studied the 1985 cohort of URL officers in all curriculums at NPS. An important finding by Simboli to this thesis was that URL females were represented in greater numbers in the Department of Administrative Sciences, now called the Department of Systems Management, than in the other departments, and that females had higher utilization rates. These factors, therefore, drove the

utilization rates of URL graduates from Administrative Science curriculums higher than the overall NPS average for URL officers. Simboli calculated that in the 1985 cohort female URL officers accounted for 29.8 percent of the total URL officers in the Department of Administrative Sciences. In the period 1981 to 1985, female URL officers represented only 12.6 percent of the total URL Financial Management graduates. Table 3 shows the yearly totals of graduates by gender and community.[Ref. 30]

Table 3. NPS Financial Management Graduates
(By Gender)

	1981		1982		1983		1984		1985		TOTALS	
	M	F	M	F	M	F	M	F	M	F	M	F
URL	9	2	11	0	14	4	22	3	27	3	83	12
RL	2	0	1	0	1	0	2	0	0	0	6	0
STAFF	15	0	21	0	18	0	22	1	18	1	93	2
YEARLY TOTALS	26	2	33	0	33	4	46	4	45	4	183	14

B. COHORT FILES 1981 TO 1985

Cohort files follow a population from a specified base year through some specified future year for the purpose of measuring performance, in the case of this study, utilization and retention. A cohort file is referred to by the base year in which the population is initially looked at. In this study, for example, the 1981 cohort identifies that year as the reference mark from which utilization and retention will

be tracked for the Navy officer population. New cohort files historically have been created at one year intervals. Each new cohort file represents a "snapshot" of the Navy officer population at that specific point in time and includes all information reflected in the records since the previous cohort. In successive years as new cohort files are added, performance is measured by looking at the changes that occur in each new "snapshot." The cohort files used in this study are a derivative of the Navy Officer Master File (OMF) Extract.

During the period 1981 to 1985, the number of records per cohort file ranged from 67,000 to 74,000 respectively. The cohort record is divided into several parts: general initial data, selected current data, unique identity flags/counters, loss data, previous enlisted data, language data, personal data, subspecialty data, organizational data, educational data, and reserve loss data. There are 925 unique data elements available to code and classify records. The data elements included in the extract for this study capture data applicable to utilization and retention of the sample population.

C. METHODOLOGY

1. Identification of the Sample Population

The first step was to identify the sample population through data extraction of the cohort files. All officers with a XX31 subspecialty code, either as a primary, secondary, or tertiary code, were selected and arranged by the calendar year in which they received their initial XX31 code. Those officers that were subspecialty coded while at Monterey,

identifying them as NPS graduates, were further isolated and categorized by subspecialty code suffix. This divided all of the NPS Financial Management graduates into the suffix category NPS XX31(PQMNCD) or NPS XX31(G).⁷ To collect data by calendar year it is necessary to use the cohort file created in the following year to ensure that time late data entry is reflected in the OMF extract. The 1981 NPS graduating class profile, for example, was constructed using the cohort file produced from the September 1982 OMF extract.

2. Utilization

The next step entailed tracking this five year sample population to measure utilization and retention. The data for this thesis covers the period from graduation (1981 to 1985) up through 1995. For some officers in this population, full life-cycle utilization can be evaluated (minimum 20 year career). The research questions require segmentation of the population according to officer community (URL, RL, and Staff) as well as by gender. There is a subspecialty data field in each officer's record that identifies, by a letter code, the officer's status with respect to utilization based on DoD guidelines [Ref. 31]. Table 4 provides a list and description of these utilization codes. Each time an officer is detailed,

⁷The category NPS XX31 (PQMNCD) contains those officers that have a master's level of education or higher, or possess a master's level of education and are a proven subspecialist (see Appendix A for complete suffix definitions). The category NPS XX31 (G) contains those officers that have a master's degree not fully meeting Navy criteria or graduate education at less than a master's level. This NPS phenomena was discussed in detail on page 28.

Table 4. DoD Utilization Compliance Codes
From Ref. [31]

CODE	DESCRIPTION
X	Must use next - an officer who is inside the DoD window and the first shore tour was not a payback. Officers in this category are not counted against overall compliance.
Y	Utilized multiple tours in DoD window
Z	Utilized one tour in DoD window
A	Not yet utilized - outside DoD window
B	Utilized one tour outside DoD window
C	Utilized multiple tours outside DoD window

NOTE: DoD window - assignment to a coded subspecialty billet within two shore tours following graduation.

his/her record is reviewed to update any change in their utilization status, per the codes in Table 4. These codes are used to calculate the utilization figures in the Navy's *Semi-Annual Report of Subspecialty Utilization and Guideline Compliance*, as shown in Appendix B. These codes will also be used as the basis for this research. Whereas the *semi-annual report* is a snapshot view of subspecialty officers from any funded graduate education program currently on active duty, this thesis is concerned with long term utilization in the sample population of Financial Management Graduates from NPS. A tabulation of the codes in each officer category, e.g., male, female, URL, RL, Staff officer, > 20 years active duty, < 20 years active duty, etc., when divided by the total number of officers in that category, provides the utilization

percentages outlined in the research questions. For example, if there are a total of 95 URL officers and 50 have completed at least one payback tour within two shore tours of graduation, then the overall DoD compliance for URL officers is 50/95, or 52.6 percent.

3. Retention and Life-Cycle Evaluation

Finally, the population was grouped according to total time in service benchmarks and viewed per the preceding criteria. These classifications sorted the population so that full life cycle utilization and retention could be tallied. Table 5 describes each of the three time in service categories used in this study.

Table 5. Time In Service Classifications

CLASSIFICATION	DESCRIPTION
< 20	Officers on active duty with less than 20 years service.
≥ 20	Officers who have completed at least 20 years on active duty.
Loss prior to 20	Officers who have separated from active duty with less than 20 years service.

The cohort files used in this thesis are maintained on the NPS mainframe computer. Ms. Judy Harr, Computer Programmer Analyst, Office of Instruction, Naval Postgraduate School, provided the software interface to extract the data as described in this section.

D. EVALUATION OF 1994 AND 1995 GRADUATES

To provide a current prospective into the process that determines matriculation into NPS and actual results in the form of graduates (coded subspecialists), the Financial Management graduating classes of 1994 and 1995 were analytically evaluated. The study of this process required the *Officer Graduate Education Quota Plans*, promulgated by PERS-213D and described in Chapter II, for the years 1993 and 1994. The scheduled convening dates for the Financial Management curriculum are January and July, and the curriculum has a normal course length of 18 months, therefore the students that entered NPS in 1993/94 are reflected as graduates in 1994/95. For example, the class that matriculated in June of 1994 were the December 1995 graduates. Occasionally, there are exceptions to this cycle, such as a student dropping back a quarter due to medical reasons, or a student from another curriculum transferring into the Financial Management curriculum.

The initial consideration in this process was the billet inventory. The validated billet inventory from the 1993 biennial Subspecialty Requirements Review was obtained from Fiscal Management Division (N82); this inventory provided the complete list of Financial Management billets by billet title and designator. The designators were grouped into their respective officer communities to determine percentages for comparative purposes. This inventory represents the "needs" of the Financial Management community.

Next, the 1995 inventory of Financial Management subspecialists was acquired, also from N82. This inventory of

bodies has fluctuated since 1992/3. Designator and officer percentages were still calculated, however, also to be considered in the analytical evaluation of this process. The inventory of bodies represents the "supply on hand" of Financial Management subspecialists.

These inventory percentages taken together provide a rough basis for evaluating the composition of the quota plan with respect to designator and officer community. Specifically, this evaluation seeks to determine if enrollment in the Financial Management curriculum is proportional and consistent among officer communities. An attempt is made to see how well the quota plan compares with the composition of the actual graduating classes. That is, how well do the results match the plan? The intent of this part of the study is to appraise the process that determines the enrollment plan, and verify if the plan and results are congruent.

This chapter has described the sample population that is the basis for this utilization and retention study, as well as the methodology employed in addressing the research questions. Chapter V presents the analysis and findings of this research. Also in Chapter V, the cohort files used in the utilization and retention study will be validated using the Registrar's records.

IV. ANALYSIS AND FINDINGS

In this chapter, the data collected for this thesis is presented and analyzed to answer the primary and subsidiary research questions posed in Chapter I. A majority of the data was obtained from the cohort files (1981 to 1985). These files address utilization and retention questions for this sample population of NPS Financial Management graduates. The answer to the subsidiary questions will provide the basis for evaluating the primary research question regarding subspecialty life cycle management of Financial Management graduates. In a current view of subspecialty management, the data used to determine yearly matriculation into the NPS Financial Management curriculum is presented as well as an analysis of the process from enrollment through graduation. The initial section of this chapter is devoted to the validation of the cohort files through reconciliation with the Registrar's records of Financial Management graduates (presented fully in Chapter III). This will ensure that the cohort database is a complete and accurate representation of the NPS Financial Management graduates from 1981 to 1985.

A. VALIDATION OF THE COHORT FILES 1981 TO 1985

The cohort files were validated by matching them against the Registrar's records for the sample population. Figure 6 graphically displays both the cohort files and the Registrar's records, separated by officer community, for each year (1981 to 1985). It is apparent from this comparison that the yearly populations closely match with only minor disparities. The differences in overall yearly totals range from a low of

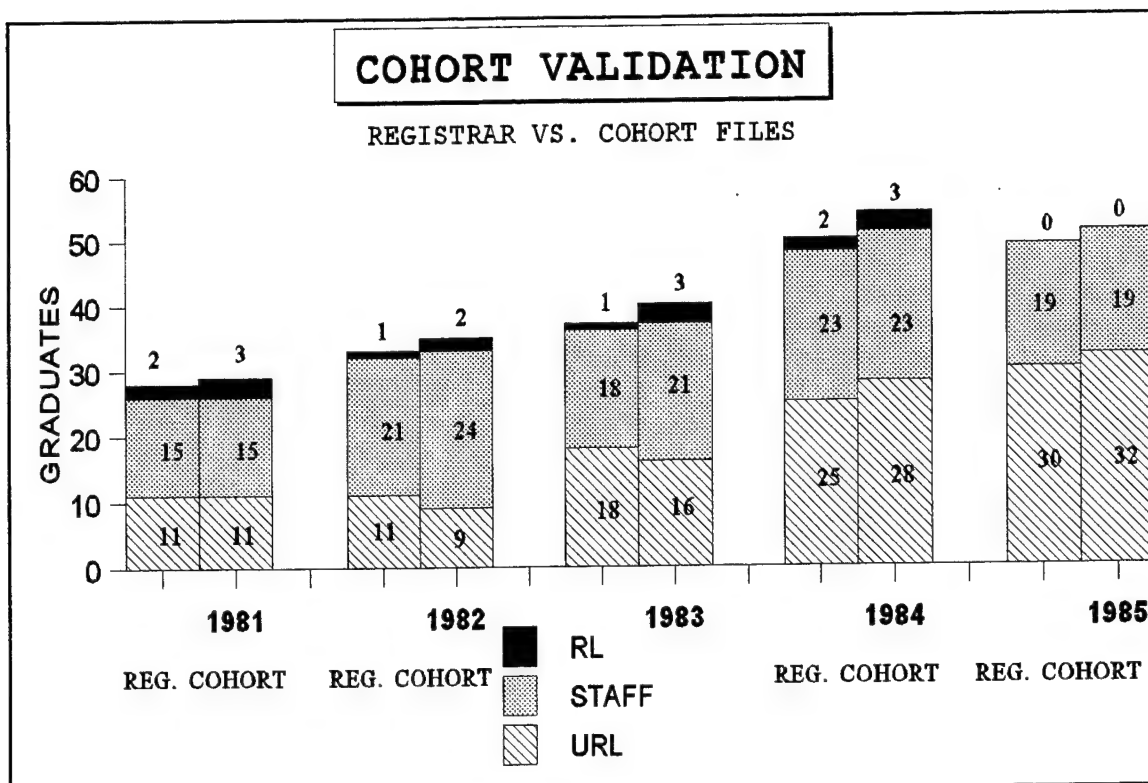


Figure 6. Cohort File Validation.

one officer in 1981 (Registrar - 28 graduates, cohort - 29 graduates) to a high of four officers in 1984 (Registrar - 50 graduates, cohort - 54 graduates). Over the five year period, the cohort files totaled 209 graduates and the Registrar's records totaled 197. This difference of 12 officers represents 6.09 percent of the validation sample population constructed from the Registrar's records.

Comparisons among the officer communities for each year produce similar results. In many cases, a respective officer community total matches up exactly for a given year. In 1981, for example, the number of graduates in both the URL and Staff Corps communities are the same in both data bases. This phenomena occurs in three of the five years for Staff Corps officers (1981, '84, '85). The five year totals show that the

cohort files population of NPS graduates contains slightly more officers in each community than the population reflected in the Registrar's records. Table 6 presents this data.

Table 6. Officer Community Aggregate Totals
(Registrar VS. Cohort files)

OFFICER COMMUNITY	REGISTRAR	COHORT	DIFFERENCE (CO. - REG.)	% DIFFERENCE DIFF./197
URL	95	96	1	.5%
STAFF	96	102	6	3.05%
RL	6	11	5	2.54%
5 YEAR TOTALS	197	209	12	6.09%

This table draws attention to the RL community as having the largest disparity between the databases. The Registrar's records reflect a total of six RL graduates during this period accounting for 3.05 percent of the total graduates. The cohort files show 11 RL graduates during this same period amounting to 5.26 percent of the cohort totals. The variance of five graduates is significant relative to the small number of graduates from this community. This difference is not material, however, when viewed against the overall totals of the two databases. Table 7 shows the percentage of graduates in each officer community for both data bases.

Table 7. Percentages by Officer Community

OFFICER COMMUNITY	REGISTRAR	COHORT
URL	48.22%	45.93%
STAFF	48.73%	48.81%
RL	3.05%	5.26%
TOTAL	100%	100%

Ms. Minerva Scheffel, Assistant Registrar at NPS, and Ms. Judy Harr, the NPS data base administrator for the OMF extract, were consulted regarding these minor disparities. Possible explanations for such variances include: students from other curriculums that submitted transcripts to the Financial Management curricular officer soon after their graduation from NPS to obtain validation for a secondary subspecialty code (most likely a XX31G code), such amendments to the graduation report most probably were not reflected in the yearly graduation files; OMF data input errors; and due to the time lag between graduation and OMF data input, subspecialty codes assigned to the calendar year following the one in which it was earned.

While these possible explanations were noted, no attempt was made to investigate and verify specific differences. The purpose of the validation process is to accept or reject the cohort files as a complete and accurate data base reflecting the NPS Financial Management graduates during the period 1981 to 1985. Based on the preceding comparison and analysis, the cohort files are deemed valid for purposes of this research.

The identified cohort population of 209 graduates is the basis for addressing all utilization and retention research questions submitted in this thesis.

B. SUBSIDIARY QUESTIONS

1. Utilization

Three of the five subsidiary questions deal with utilization of the sample population. The calculation of utilization of the sample population is consistent with the method used to determine utilization in the Navy's *Semi-Annual Report of Subspecialty Utilization and Guideline Compliance* (Appendix B). To calculate the percentage of overall utilization, the number of officers having completed at least one payback tour during their career is divided by the adjusted total number of officers in the population. The adjusted total, referred to as "Total Comply Opportunity" in the semi-annual report, includes the total number of subspecialty officers minus those in the "Must Use Next" column (utilization compliance codes are described in Table 4, P. 40). The "Must Use Next" officers are those officers that are inside the DoD compliance window (two shore tours) and their first assignment was not a payback tour. Since these officers still have an opportunity for utilization within the DoD window, they should not be counted in the denominator when computing utilization percentages. Otherwise, utilization rates would be biased downward by a group of officers that may still meet DoD utilization guidelines.

The category of DoD compliance measures a population's subspecialty utilization within the DoD window. To compute this percentage, the number of officers having completed at

least one payback tour inside the DoD window is divided by the "Total Comply Opportunity" officers, as calculated in the previous paragraph. These two figures historically have provided an important measure for evaluating subspecialty management.

The raw data used in this study, taken from the cohort files, is presented in Table 8. This data represents the utilization of the sample population from each respective year up through September 1995. The data is divided by year (1981 to 1985), with the five year totals compiled in the last section of the table. The yearly data is arranged using the methodology described in Chapter III. The first column in Table 8, Time in Service Classification, corresponds with the classifications and descriptions found in Table 5 (P. 41).

The second column, with the header "Blank/Unknown," accounts for those officers whose cohort records were either not coded for utilization or the letter in the utilization field was not recognized as a utilization code. The current DoD utilization code categories from Table 4 are the column headers in columns three through eight. The last column lists the total number of graduates in each year as well as the overall total of 209 graduates in the table's final section.

A total of four officers fall into the "Blank/Unknown" category. In this thesis, since no determination of utilization can be made for these officers, they will be excluded from the population for all calculations regarding utilization. Additionally, the "Must Use Next" column contains a total of 19 officers which would, under

Table 8. Overall Utilization and DoD Compliance

TIME IN SERVICE CLASS.	BLANK/ UNKNOWN	OUT NOT USED	UTIL. ONE TOUR OUT	UTIL. MULTIPLE TOURS OUT	MUST USE NEXT	UTIL. ONE TOUR IN	UTIL. MULTIPLE TOURS IN	TOTAL GRADS
1981								
≥ 20	1	3	2	2	2	6	12	
< 20	0	0	0	0	0	0	0	
LOSS < 20	0	0	0	0	0	0	1	
1981 TOT.	1	3	2	2	2	6	13	29
1982								
≥ 20	1	3	3	8	0	6	11	
< 20	0	0	0	0	0	0	0	
LOSS < 20	0	0	0	0	2	0	1	
1982 TOT.	1	3	3	8	2	6	12	35
1983								
≥ 20	1	3	3	5	0	8	11	
< 20	0	2	0	2	0	0	0	
LOSS < 20	0	1	1	0	1	2	0	
1983 TOT.	1	6	4	7	1	10	11	40
1984								
≥ 20	1	7	5	1	3	15	12	
< 20	0	1	0	1	0	1	4	
LOSS < 20	0	0	0	0	1	0	2	
1984 TOT.	1	8	5	2	4	16	18	54
1985								
≥ 20	0	8	1	0	3	11	10	
< 20	0	2	0	0	2	2	4	
LOSS < 20	0	0	0	0	5	3	0	
1985 TOT.	0	10	1	0	10	16	14	51
TOTALS 1981 TO 1985								
≥ 20	4	24	14	16	8	46	56	
< 20	0	5	0	3	2	3	8	
LOSS < 20	0	1	1	0	9	5	4	
5 YR. TOT.	4	30	15	19	19	54	68	209

the methodology employed in the Navy's semi-annual utilization report, be subtracted from the population total for purposes of determining utilization rates. Nine of the 19 officers in this category, however, separated from active duty (Loss < 20-five year total) while in a "Must Use Next" status. Separation obviously precludes any future utilization and as such these nine officers are counted as "Out Not Used" for purposes of this thesis. Furthermore, the time in service classification of ≥ 20 reflects those officers that have completed at least 20 years service and may or may not still be on active duty. This accounts for another eight officers in the "Must Use Next" column. Since their duty status cannot be determined from the raw data, these officers will remain as part of the "Must Use Next" total. The adjusted total in the "Must Use Next" column is 10 officers.

With the explanation of the raw utilization data complete, the subsidiary questions can be addressed. The first utilization question posed in Chapter I was:

What percentage of NPS Financial Management graduates complete at least one tour in a Financial Management billet sometime in their career?

The numerator for this calculation is the sum of all the utilization categories in Table 8: "Util. One Tour Out" (15); "Util. Multiple Tours Out" (19); "Util. One Tour In" (54); "Util. Multiple Tours In" (68); taken from the five year totals section. Overall, 156 officers have been utilized in this population. The denominator, or "Total Comply Opportunity," is the "Total Grads." (209), minus the

"Blank/Unknown" (four), and adjusted "Must Use Next" (ten) officers. This leaves a denominator of 195. Thus, the overall utilization calculation for this population of NPS Financial Management graduates is:

$$156/195 = 80\%$$

Full career utilization in this population refers to the utilization rate among those officers that have completed at least 20 years of active duty service (≥ 20). At the 20 year mark, officers are retirement eligible and further utilization is subject to the officers' desires vice needs of the Navy. Additionally, officers holding the terminal rank of Lieutenant Commander have a retirement mandate at 20 years of service, precluding any further possibility of their utilization. Also, the prospect of utilizing officers after 20 years that have not previously served in a payback billet (non-proven subspecialist) should be considered low. Therefore, this utilization rate serves as a final career benchmark for the population and an overall means to evaluate the subspecialty management of this population. The data in this study does not distinguish the number of officers in this category (≥ 20) that still remain on active duty.

The notion of full career utilization is unique to this thesis. It is calculated using the figures provided in the five year totals section across the " ≥ 20 " row. The total number of officers in this category is 168. Four of those officers are in the "Unknown/Blank" column and, as in computation of overall utilization, are excluded from the total. The adjusted total of 164 serves as the denominator

for this calculation. Unlike computing overall utilization, "Must Use Next" officers are not subtracted from the total population of this group. As explained in the previous paragraph, after 20 years utilization prospects are deemed low, especially for a non-proven subspecialist probably at the rank of Commander or Captain. This is also weighed against overriding career considerations to serve in other billets that may be more career enhancing for a senior officer.

The numerator is computed the same as for overall utilization but only using the five year totals in the ≥ 20 category. The utilization columns (Table 8) sum to 132 ("Util. One Tour Out" (14); "Util. Multiple Tours Out" (16); "Util. One Tour In" (46); "Util. Multiple Tours In" (56)). The full career utilization calculation for this population of NPS Financial Management graduates is:

$$132/164 = 80.49\%$$

The second utilization question posed in Chapter I was:

What percentage of NPS Financial Management graduates comply with DoD directives for subspecialty utilization (i.e., to fulfill a payback tour within two shore tours)?

The number of "Total Comply Opportunity" officers as determined for overall utilization also serves as the denominator to calculate DoD compliance (195). The numerator, however, only counts those officers utilized inside the DoD window of compliance. The sum of these two columns is 122; "Util. One Tour In" (54) plus "Util. Multiple Tours In" (68).

Thus, the DoD compliance for this population of NPS Financial Management graduates is:

$$122/195 = 62.56\%$$

The full career DoD compliance is similarly computed using the "Total Comply Opportunity" number determined for full career utilization as the denominator (164), and a numerator consisting of the number of officers utilized inside the DoD window for the ≥ 20 category (102 = "Util. One Tour In" (46) plus "Util. Multiple Tours In" (56)). The full career DoD compliance calculation for this population of NPS Financial Management graduates is:

$$102/164 = 62.20\%$$

The third utilization question posed in Chapter I was:

How does utilization differ among officer communities (Unrestricted Line (URL), Restricted Line (RL), and Staff Corps)? By gender?

To address utilization among officer communities, the raw data from the cohort files has been tabulated for each officer community. This information, presented in Table 9, gives the five year totals for each utilization category as formatted and discussed in Table 8. The methodology of calculation for overall utilization and DoD compliance is also identical to that employed to determine utilization in the overall sample population. As such, the computation to determine the numerator and denominator is not repeated, but rather the fraction and percentage for overall utilization and DoD

TABLE 9. Utilization by Officer Community

TIME IN SERVICE CLASS.	BLANK/ UNKNOWN	OUT NOT USED	UTIL. ONE TOUR OUT	UTIL. MULTIPLE TOURS OUT	MUST USE NEXT	UTIL. ONE TOUR IN	UTIL. MULTIPLE TOURS IN	TOTAL GRADS
URL TOTALS 1981 TO 1985								
≥ 20	1	16	7	4	7	21	15	
< 20	0	5	0	0	2	1	4	
LOSS < 20	0	1	0	0	7	4	1	
5 YR. TOT.	1	22	7	4	16	26	20	96
STAFF TOTALS 1981 TO 1985								
≥ 20	3	5	6	11	0	23	39	
< 20	0	0	0	2	0	2	4	
LOSS < 20	0	0	1	0	2	1	3	
5 YR. TOT.	3	5	7	13	2	26	46	102
RL TOTALS 1981 TO 1985								
≥ 20	0	3	1	1	1	2	2	
< 20	0	0	0	1	0	0	0	
LOSS < 20	0	0	0	0	0	0	0	
5 YR. TOT.	0	3	1	2	1	2	2	11
SUM TOTALS 1981 TO 1985								
ALL CLASS.	4	30	15	19	19	54	68	209

compliance is provided. For overall utilization, the following percentages have been calculated using the data in Table 9:

Unrestricted Line (URL)	$57/86 = 66.28\%$
Staff Corps	$92/99 = 92.93\%$

Restricted Line (RL) $7/10 = 70\%$
 All officer communities $156/195 = 80\%$

For DoD compliance, the following percentages have been calculated using the data in Table 9:

Unrestricted Line (URL) $46/86 = 53.49\%$
 Staff Corps $72/99 = 72.73\%$
 Restricted Line (RL) $4/10 = 40\%$
 All officer communities $122/195 = 62.56\%$

Utilization by gender is determined using the data in Table 10. This table, also compiled using the cohort files, displays the five year totals for both males and females.

Table 10. Utilization by Gender

TIME IN SERVICE CLASS	BLANK/ UNKNOWN	OUT NOT USED	UTIL. ONE TOUR OUT	UTIL. MULTIPLE TOURS OUT	MUST USE NEXT	UTIL. ONE TOUR IN	UTIL. MULTIPLE TOURS IN	TOTAL GRADS.
♀ TOT. 1981 TO 1985								
≥ 20	1	0	0	0	0	0	7	
< 20	0	1	0	0	0	1	3	
LOSS < 20	0	1	0	0	0	1	1	
5 YR. TOT.	1	2	0	0	0	2	11	16
♂ TOT. 1981 TO 1985								
≥ 20	3	24	14	16	8	46	49	
< 20	0	14	0	3	2	2	5	
LOSS < 20	0	0	1	0	9	4	3	
5 YR. TOT.	3	38	15	19	19	52	57	193
SUM TOT. 1981 TO 1985								
ALL CLASS.	4	30	15	19	19	54	68	209

As determined from the table, females comprise 7.66% (16/209) of the sample population in the cohort files. One officer in this segment of the population is in the "Blank/Unknown" category, therefore 15 can be evaluated for utilization. Examination of the table reveals distinctive patterns of utilization among the female officers. High utilization is clearly evident in this small segment of the population. Of the 15 female officers in this population, 13 have achieved utilization and all were utilized inside the DoD window. Furthermore, 11 of the 13 officers completed multiple subspecialty tours. For overall utilization by gender, using the calculation method already described, the following percentages have been calculated using the data in Table 10:

Female	$13/15 = 86.67\%$
Male	$143/180 = 79.44\%$

For DoD compliance, the following percentages have been calculated using the data in Table 10:

Female	$13/15 = 86.67\%$
Male	$109/180 = 60.56\%$

2. Retention

This study examines retention in the sample population to determine if this factor is significantly impacting the Navy's recoupment of its graduate education investment. Officers that separate from active duty prior to 20 years of service reduce the Navy's window of opportunity for utilization over that of career officers and, subsequently, may reduce overall utilization and DoD compliance rates. This examination does

not attempt to determine why officers in the sample population have separated from active duty prior to the retirement eligible mark (20 yrs.), but rather it attempts to determine if their separation is significant to the population as a whole. To provide a basis for comparison, the retention rate of all NPS graduates (excluding the Financial Management graduates), is compared to the retention rate for the NPS Financial Management graduates for the period 1981 to 1985.

To calculate the retention rate, the officers that have completed at least 20 years of active service and those officers that have separated prior to 20 years active service are added together to produce the retention denominator. The officers that still have not completed 20 years and remain on active duty are excluded from this calculation. These officers eventually will effect the retention rate when they either become retirement eligible or separate from active duty with less than 20 years service. The retention numerator consists of only those officers with at least 20 years active service. Table 11 provides the retention figures for both the NPS Financial Management graduates and all NPS graduates during this period. Provided with this background, the retention question posed in Chapter I was:

What percentage of graduates remain in the Navy until retirement eligible (minimum 20 years)?

Using the figures from Table 11, the retention rate denominator for Financial Management graduates is 188 (" \geq 20" (168) plus "Loss < 20" (20)), and the denominator for all

Table 11. Retention Figures for NPS Graduates 1981 to 1985

	NPS FINANCIAL MANAGEMENT GRADUATES	ALL NPS GRADUATES
≥ 20	168	1429
< 20	21	377
LOSS < 20	20	264
TOTAL GRADS.	209	2070

graduates is 1505 ("≥ 20" (1429) plus "Loss < 20" (264) minus the Financial Management graduates (188)). The numerators, from the "≥ 20" category, are 168 and 1261 (1429 minus 168) respectively. Thus, for retention the following percentages are calculated:

NPS Financial Management graduates	$168/188 = 89.36\%$
All NPS graduates	$1261/1505 = 83.79\%$

Incidental to this question, overall utilization of those officers that separated prior to 20 years is 50%, and DoD compliance for this group is 45% (calculated using figures from Table 8).

3. Analysis of Graduating Classes from 1994 and 1995

This section seeks to evaluate the process that determines matriculation into NPS, as well as how the graduating classes from 1994 and 1995 compare with the *Officer Graduate Education Quota Plan*. The evaluation employs simple methodology as it is not an exercise in precision but rather an overview of the process that produces Financial Management

subspecialists. Basic percentages and ratios are calculated to provide a rough gauge to evaluate the quota plan that determines matriculation into the Financial Management program. A comparison of this plan and the composition of the graduating classes affords some insight into the management of the Financial Management subspecialty. Regarding this subject, the specific question posed in Chapter I was:

In recent graduating classes, is enrollment in the Financial Management curriculum proportional to the number of billets requiring a Financial Management subspecialty? Is class composition consistent and proportional among officer communities?

The quota model, described in Chapter II, is a computer program that synthesizes multiple variables to determine yearly enrollment in the Financial Management curriculum. This analysis only considers the inventory of billets and bodies (P and Q-Coded) in assessing the enrollment plan for 1993 and 1994.

A validated billet inventory, obtained from N82 and dated 28 March 1995, reflects the billets from the 1993 Subspecialty Requirements Review plus any additional billets approved subsequent to that review. 249 billets were validated in the 1993 review and one billet was approved subsequent to the review for a total of 250 billets as of 28 March 1995. The 1993 billet base of P and Q-coded officers served as the quota model input for the 1994 enrollment plan. The 1993 enrollment plan would require the billet base from the 1991 Subspecialty Requirements Review, which could not be obtained.

The billets in this inventory, grouped by officer community, are presented in Table 12.

**Table 12. Inventory of Financial Management Billets and People
(P and Q-Coded)**

	BILLET INVENTORY AS OF 28 MARCH 1995		PEOPLE INVENTORY AS OF 31 OCTOBER 1995		PEOPLE TO BILLET RATIO
	# OF BILLETS	% OF TOTAL	# OF BODIES	% OF TOTAL	
URL	111	44%	320*	55%	2.88:1
RL	4	2%	15*	3%	3.75:1
STAFF	135	54%	245	42%	1.81:1
TOTAL	250	100%	580**	100%	

* Adjusted for comparison

** Excludes flag officers (9)

The people inventory (Table 12) of Financial Management subspecialists (P and Q-coded) that was submitted in conjunction with the 1995 Subspecialty Requirements Review reflects the inventory of Financial Management subspecialist as of 31 October 1995. While it does not reflect the actual inventory that was input into the quota model to determine the 1993/4 enrollment plan, it nevertheless will provide a basis for comparison in addressing the subsidiary question. As indicated by the asterisks in Table 12, some figures have been adjusted to facilitate this study. The most significant of these adjustments is made to the URL and RL people inventory. The original data counted 268 URL officers and 67 RL officers in the people inventory. The adjusted totals listed in Table

12 are 320 and 15 officers, respectively. The difference, 52 officers, has been added back to the URL people inventory. This is explained by the change in designation to the General Unrestricted Line (GURL) officer corps. In 1993, GURL officers were designated 110X and grouped as part of the URL community. In 1994, GURL 110X's were redesignated as 170X's and grouped with the RL community. Subsequently, the 1995 Subspecialty Requirements Review reflected this change to the inventory of billets and bodies. The 31 October 1955 billet inventory submitted for the biennial review contained a total of nine RL billets, of which seven were GURL (170X) billets. The 31 October 1995 people inventory reflected 67 RL officers. To make comparison's with the 1993 billet structure for URL and RL billets, the 31 October 1995 people inventory must be adjusted to reflect the same designator composition of both the URL and RL communities. The adjustment is made by calculating the percentage of GURL (170X) billets to total RL billets ($7/9 = 77.8\%$) then multiplying this percentage by the RL people inventory ($77.8\% * 67 = 52$). The 52 officer correction to the URL people inventory now makes the billet and people inventories the same with respect to the designator makeup of the officer communities.

Table 12 brings out interesting contrasts, especially between the two largest officer communities, URL and Staff Corps. In examining the inventory of Financial Management billets, it can be seen that URL billets comprise 44 percent of the total billet inventory and Staff Corps billets account for 54 percent of the total. In people inventory, however, URL claims 55 percent of the total body inventory while the

Staff Corps makes up only 42 percent. The URL bodies to billets ratio calculates to approximately 3:1. The Staff Corps computes an approximate 2:1 ratio. The result is that relative to the Staff Corps, URL has fewer billets to fill but maintains a greater stockpile of officers for utilization.

The Financial Management quotas for 1993/4, grouped by officer community, are presented in Table 13. This information comes from the yearly *Officer Graduate Education*

Table 13. Quota Plan vs. Graduation Class

	QUOTA PLAN CY 1993		GRADUATION CLASS CY 1994	
	# OF OFF.	PERCENT	# OF OFF.	PERCENT
URL	21	56.8%	20	54.1%
RL	2	5.4%	1	2.7%
STAFF	14	37.8%	16	43.2%
TOTAL	37	100%	37	100%
	CY 1994		CY 1995	
URL	20	55.6%	22	56.4%
RL	2	5.6%	3	7.7%
STAFF	14	38.8%	14	35.9%
TOTAL	36	100%	39	100%
	2 YEAR		TOTALS	
URL	41	56.1%	42	55.3%
RL	4	5.5%	4	5.2%
STAFF	28	38.4%	30	39.5%
TOTAL	73	100%	76	100%

Quota Plan, promulgated by PERS-213D. Listed beside the quota plan figures are the actual composition of the corresponding graduating class for that respective year's plan. For example, the quota plan for CY 1993 matches with the graduating class of CY 1994. Graduation information was compiled from Graduation Reports in the Registrar's office. These figures do not include the few officers from other curriculums who were awarded XX31 as a secondary subspecialty.

Examination of the quota plans show that the number and composition of each year's plan is essentially the same. There is a total difference of one officer (URL 1993 - 21, URL 1994 - 20) between the two plans. Table 13 also shows that the differences between the quota plans and respective graduating classes, for purposes of this study, are negligible. Some of the minor discrepancies are explained by the information in the Graduation Report. The 1993 quota plan called for 21 URL officers and the graduating class contained only 20. The graduation report, however, listed one URL officer as an attrite, accounting for this difference. The RL community had yearly quotas of two officers. The graduation data indicated there was one RL officer in 1994 and three RL officers in 1995 for a two year total of four, equaling that of the quota plan. It is concluded that enrollment in the Financial Management curriculum is proportional to the existing people inventory of subspecialists, as shown in Table 12, and that each year's plan was consistent in number and composition. It is further concluded that for management purposes, there is an attempt to maintain the Table 12 people inventory percentages for each officer community. The

following comparison of officer community percentages emphasizes this point:

	People Inv. (Table 12)	Quota Plan (2 Yr. Tot.)	Grad. Class (2 Yr. Tot.)
URL	55%	56.1%	55.3%
RL	3%	5.5%	5.2%
Staff	42%	38.4%	39.5%

With the transition of GURL (170X) officers to the Restricted Line community future inventories will reflect a different composition.

C. PRIMARY RESEARCH QUESTION

A collective analysis of the answers to the subsidiary questions is the basis for rendering an opinion on the primary research question. The primary research question introduced in Chapter I was:

How effective has the Navy been in utilizing Financial Management graduates throughout their careers?

This question asks for an assessment of the overall management of the subspecialty. Subsidiary findings suggest that Financial Management graduates are effectively utilized throughout their careers. A closer examination of the findings provides support for this opinion.

The sample population's overall utilization rate of 80% and DoD compliance rate of 62.56% may imply suboptimization of these subspecialists, especially considering the Navy's liberal two shore tour interpretation of the service wide DoD guidelines that call for a payback tour within two tours of

graduation. However, career path considerations and the structure of the subspecialist inventory indicate these are practical utilization rates. URL officers, which comprise 55% of the subspecialist inventory, have a primary allegiance to their warfare communities. Promotion and command opportunities make fulfilling operational career enhancing billets more desirable to the URL officer. High utilization, such as that achieved by Staff Corps officers (92.3% overall), would be at the expense of the officer and the operational community. Thus, the largest segment of the inventory population is making trade-offs between subspecialty utilization and operational career considerations. This factor clearly requires consideration by the subspecialty managers when evaluating utilization.

Another factor that produces a drag on the utilization rate of URL officers and ultimately on the utilization rate of the entire subspecialty community, is the bodies to billet ratio. URL officers are maintaining an approximate 3:1 ratio. With three times as many officers as billets, even if URL officer availability were not an issue, high utilization would be prohibitive. It is felt that the high ratio, also evident in the small RL community (4:1), is a concession to the availability constraints of officers in these communities. If utilization were the driving concern, the solution would be to reduce the inventory of URL and RL officers and increase their availability for utilization. A balanced ratio and a priority utilization status would clearly increase utilization rates, but as previously mentioned such action would be to the detriment of the officer and of operational concerns.

Although women are a small percentage (7.7%) of the sample population, their presence has made a positive impact on the URL community where they comprise 15.6% of the total. Females were utilized at a significantly higher rate (overall URL female = 85.71%) than their male counterparts in the URL community (overall URL male = 62.5%). They also showed a pattern of high multiple tour utilization inside the DoD window (71.43%).

For reasons discussed, the utilization rates are deemed acceptable and appropriate for this population. The consistency of the enrollment plans indicate there is an optimal inventory structure for the Financial Management community and that lower utilization among URL and RL officers is a known and accepted outcome.

This chapter provided analysis and findings in addressing the research questions, ultimately concluding that the Financial Management graduates are being effectively utilized throughout their careers. Chapter V will present conclusions and recommendations from this research.

V. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

The analysis from this study supports the conclusion that the Navy has effectively utilized the sample population (1981 to 1985) throughout their careers. While overall utilization (80 percent) and DoD compliance (62.56 percent) rates of the sample population are well below the CNO's policy, "The goal for utilizing subspecialists is 100 percent," utilization is commensurate with the structure of the subspecialist population.

A breakdown of the 1995 subspecialty population by officer community shows that URL (55 percent) officers make up a majority of Financial Management subspecialists, followed by Staff Corps (42 percent) and RL (3 percent) officers.⁸ The enrollment quota plan for 1993/4 essentially maintained input to the NPS curriculum at these same percentages. The 28 March 1995 billet inventory, however, shows that a majority of the billets are for Staff Corps (54 percent) officers, followed by URL (44 percent) and RL (2 percent) officers. Consequently, the bodies to billets ratios show an imbalance within the communities. URL bodies to billets ratio calculated to almost 3:1, RL had almost 4:1, and the Staff Corps ratio computed to almost 2:1.

⁸The 31 October 1995 inventory of Financial Management subspecialists was adjusted to facilitate comparison with the 1993 billet structure. The GURL (170X) officers were included back in with the URL officers for this purpose. A complete explanation is provided on page 62 and 63.

These figures suggest that 100 percent utilization may not be practical. URL officers for example, comprise 55 percent of the people inventory but URL billets make up only 44 percent of the billet inventory and they have an approximate 3:1 bodies to billets ratio. When contrasted with the Staff Corps, 42 percent of the people inventory, 54 percent of the billet inventory and an approximate 2:1 bodies to billets ratio, this comparison indicates that URL officers are stockpiled relative to the URL billet inventory. High inventories of URL officers make full utilization difficult, as the utilization rates of the sample population (1981 to 1985) show: URL overall - 66.28 percent, URL DoD compliance - 53.49 percent.

It is recognized that URL officers have restricted availability to fill subspecialty billets. Their promotion and command opportunities are linked primarily to performance in warfare specialty billets. This factor is programmed for in the quota model as reflected by higher matriculation rates into the NPS curriculum. Thus, a higher overall inventory and bodies to billets ratio allows the URL community some degree of flexibility in detailing its officers to warfare specialty or Financial Management subspecialty billets. This balance enables URL Financial Management billets to be filled by URL officers and not adversely impact the officers' careers or the operational Navy.

Conversely, subspecialty utilization among Staff Corps officers is not subject to such constraints. A subspecialty designation for a Staff Corps officer is analogous to a warfare specialty for an URL officer. The subspecialty

designation may be the primary consideration for future assignments and career direction. A comparison of the utilization rates between Staff Corps and URL officers supports these conclusions, 92.93 percent to 66.28 percent, respectively.

In terms of utilization, URL and RL officers will likely always exhibit lower rates than Staff Corps officers. The operational officers, however, bring invaluable experience and perspective to those critical billets that require more than a professional Staff Corps Financial Management officer. These billets need the input and judgement of officers who have extensive operational experience in their warfare specialties and who understand what is needed in the fleet. URL officers can better impact those crucial budget decisions when a choice between resources must be made. Graduate education is a cost that can be measured and accounted for, but the unique insights of the URL officer cannot be quantified. These contributions must be recognized and factored into the total management of the subspecialty system.

It has been reasoned that there is a trade-off by including URL, and also RL officers, in the Financial Management subspecialty. Their lower utilization is offset by the unique and relevant experience that is required in some Financial Management billets. The alternative would be to establish a professional corps of financial managers. This would provide a high return on investment, based solely on utilization rates. Each graduate education dollar could be matched to a payback tour. However, this would decrease the amount of "real" Navy knowledge in Financial Management

decisions. At the highest levels, Financial Management subspecialists need to have operational knowledge to be credible.

This thesis supports the inclusion of all officer communities in the Financial Management subspecialty. Utilization in the sample population, although not 100 percent, has been shown to reflect the programmed inputs to the system. It is concluded that the Navy is receiving a fair return on its investment in graduate education and also that the Financial Managements graduates are being effectively managed.

B. RECOMMENDATIONS

A primary recommendation of this study is that benchmark measures of effectiveness be established to evaluate utilization. While 100 percent may be a "goal" for utilization it does not reflect a realistic means of measuring effective management of the subspecialty inventory. The utilization rates of the sample population (80% overall, 62.56% DoD compliance), perhaps are not as high as they could be. Based on the optimal mix of officers maintained in the inventory, as currently determined by the quota model, utilization rates that can reasonably be achieved with effective management could be determined. This would at least provide a comparative basis for evaluation.

It is also recommended that NPS maintain utilization records on its graduates. The Navy's semi-annual report on utilization uses a snapshot of the officer population to compute overall utilization and DoD compliance. This cross-sectional method fails to account for many officers who leave

active duty while inside the DoD window. Their utilization or lack thereof is never reflected in the reports. Longitudinal tracking, the monitoring of utilization from graduation through retirement, of the subspecialty population would give a true picture of utilization and the Navy's return on investment. The semi-annual report from 13 October 1995 (Appendix B) presents considerably higher utilization rates than were determined for the sample population in this thesis. Although the reports are looking at different populations and a true comparison cannot be made between the two, the methodology behind the snapshot report is fundamentally flawed. The semi-annual report measures utilization of only those officers who are on active duty at the date of the report. Officers in the "Must Use Next" category who leave active duty are never counted against utilization and their loss on investment is not counted. If NPS maintained their own files they could accurately report the educational return on investment from NPS.

Lastly, a phenomenon was noted while conducting research for this thesis that is unrelated to the scope of the study. The phenomenon is the unusually high number of officers who fail to complete the prescribed program on time. These officers do not graduate with their class and do not receive a master's degree. In the sample population of officers assigned to the NPS Financial Management curriculum (1981 to 1985), 14.8 percent or 27 out of 182 officers fell into this category. Most of these officers left NPS on a thesis extension. Many subsequently did finish and receive a degree. Nevertheless, it would be worth examining this phenomenon to

determine if it is still occurring. If it is, an examination of the contributing factors should be undertaken and appropriate remedies suggested. It could be argued that failure to earn a degree is the officer's loss, but failure to complete requisite class work or a DoD oriented thesis could represent a substantial loss to the Navy.

APPENDIX A
FUNCTIONAL FIELDS
(1ST AND 2ND CHARACTERS)

Background Experience

Functional Fields are only assigned by board action.

10XX NO LONGER ASSIGNED
30XX INTELLIGENCE
40XX OPERATIONS SYSTEMS TECHNOLOGY
50XX COMMAND & CONTROL
60XX PLANS AND PROGRAMS
70XX POL-MIL/STRAT PLAN
80XX MATERIAL SUPPORT
83XX RDT&E
90XX MANAGEMENT AND HUMANITIES

00XX Officer: If other functional fields do not apply
00 is assigned.

Billet: Should be assigned unless staff corps
subspecialty.

APPENDIX A
EDUCATION/TRAINING/EXPERIENCE FIELDS
(3RD AND 4TH CHARACTERS)

XX10-PUBLIC AFFAIRS	XX49-OPERATIONAL OCEANOGRAPHY
XX11-ENGLISH	XX50-NAVAL SYS ENG (GEN) [A]
XX12-HISTORY	XX51-NAVAL CONSTRUCTION & ENG
XX16-JOINT INTELLIGENCE	XX52-NUCLEAR ENGINEERING
XX17-NAVAL TECH INTEL	XX53-NUC PROP PLANT OPS
XX18-REGIONAL INTEL	XX54-NAVAL/MECHANICAL ENG
XX19-OPERATIONAL INTEL	XX55-ELECTRONIC ENG
XX20-GEN POLITICAL SCI	XX56-UNDERWATER ACOUSTICS [D]
XX21-MIDEAST/AFRICA/S.ASIA	XX60-WEAPONS ENG (GEN) [A]
XX22-FAR EAST/PACIFIC	XX61-WEAPONS SYS ENG [D]
XX23-WESTERN HEMISPHERE	XX62-CHEMISTRY
XX24-EUROPE	XX63-WEP SYS SCI (PHYSICS) [D]
XX25-INT'L NEGOTIATIONS [D]	XX66-COMBAT SYS SCI & TECH
XX26-STRATEGIC PLAN (GEN) [D]	XX67-NUC PHYS (WEPS & EFFECTS)
XX27-STRATEGIC PLAN (NUC) [D]	XX68-STRAT WEPS (FBM)
XX28-STRATEGIC PLAN	XX69-STRAT NAV (FBM)
XX29-SPEC OPS/LOW INT CONF	XX70-AERO SYS END (GEN) [A]
XX30-MANAGEMENT (GEN) [A]	XX71-AERO ENG
XX31-FINANCIAL MANAGEMENT	XX72-AVIONICS
XX32-MATL LOGISTICS SUPT MGT	XX73-FLIGHT PERF/TEST PILOT
XX33-MNPWR, PERS, TRNG ANAL	XX75-SPACE SYS (GEN) [A]
XX35-TRANSPORTATION MGT	XX76-SPACE SYS OPERATIONS
XX37-EDUCATION & TRNG MGT	XX77-SPACE SYS ENG
XX40-APPLIED LOGIC (GEN) [D]	XX80-COMMUNICATIONS (GEN) [D]
XX41-APPLIED MATH	XX81-COMMUNICATIONS ENG
XX42-OPERATIONS ANALYSIS	XX82-COMM SYS TECH [D]
XX43-OPERATIONAL LOGISTICS	XX89-INFORMATION MGT
XX44-ANTISUBMARINE WARFARE	XX90-COMPUTER TECH (GEN) [D]
XX45-COMMAND & CONTROL [C]	XX91-COMPUTER TECH-SCI
XX46-ELECTRONIC WARFARE	XX95-COMPUTER TECH-SYS MGT [D]
XX47-GEOPHYSICS	0000-ANY DISCIPLINE
XX48-METEOROLOGY [B]	

NOTE: Staff corps can utilize some of the non-staff corps subspecialty codes.

[A] - BILLET CODES ONLY	[D] - BEING DELETED
[B] - ASSIGNED TO 1800 DESIGNATOR	[E] - NEW CODES
[C] - TWO TOURS REQUIRED FOR EXPERIENCE CODE	

APPENDIX A
LEVELS OF EXPERIENCE, EDUCATION & TRAINING
SUBSPECIALTY CODE SUFFIX (5TH ALPHABETIC CHARACTER)

- B - VALIDATED REQUIREMENT FOR MASTER'S OR HIGHER LEVEL OF EDUCATION BUT SECOND PRIORITY TO P, Q, M, N, C, OR D-CODED BILLETS; USED WHEN SUBSPECIALTY CODE COMPENSATION HAS NOT BEEN IDENTIFIED. APPLIES ONLY TO BILLETS.
- C - PHD LEVEL OF EDUCATION - PROVEN SUBSPECIALIST
- D - PHD LEVEL OF EDUCATION
- E - BACCALAUREATE LEVEL IN A FIELD APPLICABLE TO THE SUBSPECIALTY. ASSIGNED TO BILLETS IN UNIQUE AREAS THAT NEED SPECIFIC BACKGROUND TO PERFORM BILLET OBJECTIVES.
- F - MASTER'S DEGREE NOT FULLY MEETING NAVY CRITERIA OR GRADUATE EDUCATION AT LESS THAN MASTER'S LEVEL - PROVEN SUBSPECIALIST.
- G - MASTER'S DEGREE NOT FULLY MEETING NAVY CRITERIA OR GRADUATE EDUCATION AT LESS THAN MASTER'S LEVEL
- H - INDICATES A POSITION FOR WHICH THE ASSIGNMENT OF AN OFFICER WITH A MASTER'S LEVEL EDUCATION IS DESIRABLE BUT NOT REQUIRED; AFLOAT STAFF ONLY.
- M - POST-MASTER'S GRADUATE DEGREE LEVEL - PROVEN SUBSPECIALIST
- N - POST-MASTER'S GRADUATE DEGREE LEVEL OF EDUCATION
- P - MASTER'S LEVEL OF EDUCATION
- Q - MASTER'S LEVEL OF EDUCATION - PROVEN SUBSPECIALIST
- R - SIGNIFICANT EXPERIENCE - PROVEN SUBSPECIALIST
- S - SIGNIFICANT EXPERIENCE
- T - DENOTES TRAINING BILLET WHICH QUALIFIES INCUMBENT FOR AN S-CODE

APPENDIX A
MASTER'S - P, Q SUFFIX

REQUIRED P CODE - Requires the combination of both professional experience and extensive knowledge of theories, principles, processes and/or techniques certified through the acquisition of the master's degree for optimum performance of duty; also requires the conception, implementation, appraisal or management of complex Navy and/or DoD programs.

OPTIONAL P CODE - Requires the officer to routinely interface with personnel who possess master's degrees, or requires the officer to exercise technical, educational or managerial supervision over personnel who possess master's degree.

REQUIRED and OPTIONAL Q CODE - all of the P-code criteria are applicable; additionally the billet requires a proven subspecialist at the master's degree level.

APPENDIX B



**DEPARTMENT OF THE NAVY
BUREAU OF NAVAL PERSONNEL
WASHINGTON, D.C. 20370-5000**

IN REPLY REFER TO

1040
Ser 213D/5U576403

OCT 13 1995

MEMORANDUM FOR THE CHIEF OF NAVAL PERSONNEL

**Subj: NAVY SUBSPECIALTY UTILIZATION AND DEPARTMENT OF DEFENSE
(DOD) GUIDELINE COMPLIANCE**

**Ref: (a) OPNAVINST 1000.16H
(b) DoD Directive 1322.10 of 31 Aug 90
(c) OPNAVINST 1520.23A**

**Encl: (1) Semi-annual report of Subspecialty Utilization and
DoD guideline compliance for the period 01 April 1995
to 30 September 1995**

1. Per reference (a), this memorandum reports semi-annual statistics on payback tour completion in compliance with references (b) and (c) for officers who have completed Navy fully funded and partially funded graduate level education.

2. Data for individual subspecialties, depicted in enclosure (1), is a "snapshot in time", and is an indicator of how well the Navy is assigning officers (with Navy funded graduate level education) to payback tours as required by references (b) and (c). It provides information for assessing the general "health" of each subspecialty to facilitate effective management of Navy's subspecialty program from the perspectives of the Chief of Naval Personnel and Primary Consultants.

3. Navy compliance with DoD guidelines (DoD Percent), utilization of officers within two shore tours following education, continues to improve while the percent of overall utilization of subspecialists during a career (Overall Percent) shows a slight decline. The figures below for Apr93 - Mar95 reflect Navy's historical progress. As DoD percent increases, Navy increases the return on investment in officers receiving graduate education by providing an opportunity for multiple utilization tours. The decline in Overall Percent is attributed to a loss of officers who have utilized graduate education outside DoD guidelines but who have been replaced with officers within the DoD guidelines. Specific definitions and individual subspecialty compliance are further detailed in enclosure (1).

	<u>DoD Percent</u>	<u>Overall Percent</u>
Apr93 - Sep93	77.6%	91.2%
Oct93 - Mar94	78.3%	90.7%
Apr94 - Sep94	79.6%	90.6%
Oct94 - Mar95	79.7%	90.2%
Apr95 - Sep95	80.7%	89.9%

APPENDIX B

SEMI-ANNUAL REPORT OF SUBSPECIALTY UTILIZATION AND DoD GUIDELINE COMPLIANCE

This enclosure summarizes Navy compliance with DoD guidelines governing utilization (payback) of officers provided fully funded and partially funded graduate education. These officers are tracked via a graduate education sponsor code, as well as a subspecialty utilization code assigned by Pers-440E.

- DoD WINDOW for compliance calls for assignment to an appropriately coded subspecialty billet within two tours following graduation.

- OUT NOT USED is an officer who is outside the DoD window (at least two shore tours since graduation) and has yet to complete a payback tour.

- MUST USE NEXT is an officer who is inside the window and the first assignment ashore was not a payback tour. If assigned to a payback tour after the present assignment, the officer will be in compliance with DoD guidance. Officers in this category are not included in the TOTAL COMPLY OPPORTUNITY column in this report, but are accounted for in subsequent reports.

- ONE TOUR OUT is an officer who completed one payback tour but it was outside the DoD two tour window.

- MULT TOUR OUT is an officer who completed two or more payback tours, but the initial tour was outside the DoD window.

- ONE TOUR IN is an officer who has completed only one payback tour, and that tour was within the DoD window.

- MULT TOUR IN is an officer who completed two payback tours within the DoD window.

- TOTAL COMPLY OPPORTUNITY includes all officers completing some form of payback tour and those officers who have not used their subspecialty and are outside the DoD payback window. Officers in the MUST USE NEXT column do not count against this total comply opportunity since these officers still have a chance to utilize their subspecialty with a payback tour. These officers are more appropriately accounted for in the OVERALL TOTAL column.

- OVERALL TOTAL includes all officers that have received fully or partially funded graduate education.

- PERCENT DoD COMPLIANCE is the number of officers who have completed at least one payback tour inside the DoD window divided by the TOTAL COMPLY OPPORTUNITY number of officers for that subspecialty.

APPENDIX B

NAVY FUNDED GRADUATE EDUCATION

DOD GUIDELINE COMPLIANCE

AND

OVERALL UTILIZATION

	OUT NOT USED	MUST USE NEXT	ONE TOUR OUT	MULT TOUR OUT	ONE TOUR IN	MULT TOUR IN	TOTAL COMPLY OPP.	OVERALL TOTAL	PERCENT (%) DOD COMPLY	OVERALL UTIL
XX00	1	7	1	0	2	2	6	13	66.7%	83.3%
XX10	1	3	1	2	8	15	27	30	85.2%	96.3%
XX16	17	49	0	0	10	5	32	81	46.9%	46.9%
XX17	30	46	3	4	21	10	68	114	45.6%	55.9%
XX18	0	6	0	0	3	1	4	10	100.0%	100.0%
XX19	0	14	0	0	0	0	0	14	0.0%	0.0%
XX20	8	18	1	1	12	1	23	41	56.5%	65.2%
XX21	9	15	0	0	4	3	16	31	43.8%	43.8%
XX22	5	26	2	0	3	0	10	36	30.0%	50.0%
XX23	8	21	0	0	7	2	17	38	52.9%	52.9%
XX24	8	46	3	0	11	2	24	70	54.2%	66.7%
XX28	14	93	2	1	16	8	41	134	58.5%	65.9%
XX29	0	11	0	0	0	0	0	11	0.0%	0.0%
XX31	43	162	12	19	154	108	336	498	78.0%	87.2%
XX32	17	77	10	3	43	32	105	182	71.4%	83.8%
XX33	23	101	3	1	45	24	96	197	71.9%	76.0%
XX35	7	27	1	0	7	0	15	42	46.7%	53.3%
XX37	23	44	1	0	28	8	60	104	60.0%	61.7%
XX41	3	20	0	0	4	3	10	30	70.0%	70.0%
XX42	23	117	17	17	99	54	210	327	72.9%	89.0%
XX43	1	30	0	0	6	0	7	37	85.7%	85.7%
XX44	20	70	5	2	45	22	94	164	71.3%	78.7%
XX45	6	61	1	3	18	7	35	96	71.4%	82.9%
XX46	3	28	1	2	17	9	32	60	81.3%	90.6%
XX47	0	25	0	7	54	96	157	182	95.5%	100.0%
XX48	0	0	0	3	0	3	6	6	50.0%	100.0%
XX49	9	38	3	5	21	15	53	91	67.9%	83.0%
XX51	2	10	5	9	23	87	126	136	87.3%	98.4%
XX52	3	8	1	0	8	7	19	27	78.9%	84.2%
XX53	10	153	0	0	83	13	106	259	90.6%	90.6%
XX54	6	92	3	21	124	169	323	415	90.7%	98.1%
XX55	13	85	4	12	84	101	214	299	86.4%	93.9%
XX62	1	2	0	0	5	3	9	11	88.9%	88.9%
XX66	17	132	9	6	83	103	218	350	85.3%	92.2%

APPENDIX C
DETAILING AND UTILIZATION MATRIX CRITERIA

Listed below are the criteria used to read the matrix:

1. X= ANY RANK OFFICER CAN GET UTILIZATION CREDIT
2. S= LCDR AND ABOVE CAN GET UTILIZATION CREDIT
3. J= LT AND BELOW CAN GET UTILIZATION CREDIT
4. BILLETS AND PEOPLE SHOULD MATCH UP AND ACROSS THE MATRIX TO WORK
5. DETAILER WILL USE RELATED SUBSPECIALTY CODES IF EXACT MATCH CANNOT BE FOUND
6. MARKED MATRIX (IN RELATED FIELDS), ENSURES CREDIT FOR UTILIZATION OF OFFICERS

The following should be noted: P, Q, C, D, N, M, F, G, officers can only hold P or above coded billets for utilization.

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